An Atlas Of The
CHROMOSOME NUMBERS IN ANIMALS

An Atlas of the

Chromosome Numbers In Animals

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Second Edition

(FIRST American Edition)

Revised and Enlarged from
the original Tokyo edition

The Iowa State College Press
Ames, Iowa

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FOREWORD TO FIRST EDITION

During the last 50 years the volume of mounting cytological data has reached truly imposing proportions and particularly is this true of our knowledge of the number of chromosomes and their meiotic behavior in various species of animals and plants. Since such information is constantly being utilized in different biological fields -- especially by cytologists and geneticists -- it was recognized many years ago that some kind of systematic presentation of the accumulated information is urgently necessary. The excellent lists of animal chromosomes published by E. Browne Harvey in 1916 and 1920 were a response to this need and they at once became an accepted tool in the workshop of a great number of biologists.

But though new findings were added rapidly after 1920, no further dependable lists of animal chromosomes appeared until 1937. To be sure, several compilations were published during the intervening years, but they were either avowedly circumscribed in aim or else were incomplete and unreliable -- two faults that rendered them almost worse than useless. The splendid tabulation of vertebrate chromosomes published by Oguma and Makino in 1937 therefore received a warm welcome and has proved its usefulness again and again, but unfortunately no comparable treatment of invertebrate chromosomes has made its appearance.

The news that a complete listing of animal chromosomes has now been compiled is therefore most gratifying. All the more is this true since its author is Professor Sajiro Makino, whose participation in the earlier listing already mentioned would seem to promise an equal reliability in the present work. That it records data on some 2800 species, more than two and a half times as many as were included in the two Harvey lists, sufficiently indicates the urgent necessity for this new compilation. The exacting and extensive toil that must have been expended on it by its author will no doubt be rewarded by the appreciation of a very large audience of biologists.

FRANZ SCHRADER

March 23, 1948
Department of Zoology
Columbia University

FOREWORD TO THE SECOND EDITION

From my observations of Japanese agricultural science and related biological sciences in the post-war years of 1945-46 and 1948-49, I soon found that the work in both plant and animal cytology was one of the really bright spots in Japanese science today. While the progress in cytology in Japan during World War II was quite independent of that in most other countries, it had nevertheless kept apace with or even surpassed the contributions of other nations in many important aspects.

One of the really fine contributions of Japan to world knowledge has been the meticulous research work on animal chromosomes by Dr. Sajiro Makino and his staff in the Zoological Institute of Hokkaido University. Dr. Makino has devoted at least 20 years of his life to this specialized field of cytology. On many occasions during my sojourn in Japan, my colleagues had called attention to this excellent research.

All cytological research in post-war Japan has been seriously handicapped by a dearth of foreign cytological and closely related literature, shortages of chemicals, and inadequate research budgets. Dr. Makino has risen above these almost insurmountable obstacles to continue his research and publish what is perhaps the most complete list of chromosome numbers in animals that has appeared in the world to date. He has listed about 3200 species of the invertebrates and vertebrates. What is probably equally remarkable is the fact that Dr. Makino has personally investigated 144 species on this list. This experience has made him unusually well qualified to appraise the work of others in this field.

This chromosome list is one of several on which Dr. Makino has appeared as

an author. Probably the best known publications outside of Japan are:

Oguma, K., and Makino, S. Check-list of chromosome numbers in Vertebrata, Zool. Mag. (Japan) 43:176-212. 1931.

Oguma, K., and Makino, S. A revised check-list of the chromosome numbers in Vertebrata, Jour. Genetics, 26:239-254. 1932.

Oguma, K., and Makino, S. A new list of the chromosome numbers in Vertebrata (March 1937), Jour. Fac. Sci. Hokkaido Imp. Univ., Series VI, Zoology, Vol. 5(4): 297-356. 1937.

Students of animal science will immediately recognize the importance of this chromosome list as a reference, particularly those in the fields of zoology, cytology, genetics, taxonomy, evolution, and animal breeding. It has a parallel in the "Chromosome Atlas of Cultivated Plants" published by C. D. Darlington and E. K. Janaki-Ammal in 1945.

This list of animal chromosome numbers represents the fulfillment of a request that I made of Dr. Makino to prepare an English Language edition for publication in the United States. At the time, I was on the staff of General Headquarters, Supreme Commander for the Allied Powers, as Chief of the Agriculture Division of the Natural Resources Section.

It is a privilege to recommend AN ATLAS OF THE CHROMOSOME NUMBERS IN ANIMALS, second edition, to biologists everywhere.

WARREN H. LEONARD

Colorado A. & M. College
Fort Collins, Colorado
November, 1950

PREFACE TO THE SECOND EDITION

During the period since "A New List of the Chromosome Numbers in Vertebrata" appeared in March, 1937, the publication of a complete tabulation of the chromosome numbers in all animals, both vertebrates and invertebrates, has been increasingly called for in the fields of cytology and genetics. In response to this need, and to incroporate new data, a first edition of "A Review of the Chromosome Numbers in Animals" was published in Tokyo (1949) with the support of the Fourth Special Committee for Researches of Genetics in the Nippon Gakuzyutsu-Shinkokai. This list was mainly based on data obtained up to 1944 from Japanese and foreign publications which had appeared up to 1941, but an appendix contained some new data, incompletely collected up to 1948. Furthermore at the request of Japanese investigators, the first edition was originally published in the Japanese language. Unfortunately, it contained many deficiencies and oversights which were mostly due to the unfavorable conditions in postwar Japan under which the list was prepared. Upon the advice of Professor Warren H. Leonard of the Colorado A. & M. College, who suggested that so important a list should be rendered more accessible to biologists in other parts of the world, I prepared the present edition. It represents a revised and enlarged list indexed with the chromosome numbers for 3317 species of animals, namely 2754 species of invertebrates and 563 species of vertebrates, together with the pertinent references. As contrasted with the 2800 species reviewed in the list of the first edition, the present volume obviously has been considerably expanded. The Table of Contents presents a convenient list of the animals included.

In the present list, the chromosome numbers are tabulated after the fashion of the lists "A Review of the Chromosome Numbers in the Metazoa" by E. B. Harvey(1920)[1/]

1/ Part of this list appeared in 1916, while Part II appeared in the Journal of Morphology, Volume 34, pp. 1-67, 1920.

and "A New List of the Chromosome Numbers in Vertebrata" by K. Oguma and S. Makino (1937), with slight modifications. The author has accumulated data as completely as possible from the original papers published up to the end of 1948. This second edition of "An Atlas of the Chromosome Numbers in Animals" not only comprises the publications on chromosomes issued from the time of the pioneer researches until 1948, but also includes the available data of 1949. Even though the accounts conflict, all the authorities have been given for each species. As in the list previously issued, all the species are classified so far as possible under phyla, classes, orders, families, and genera. The arrangement of various phyla, classes, and orders follows current usage. For convenience of reference, the families, genera, and species are mostly put in alphabetical order. The accounts concerning the Protozoa are excluded.

The columns in the table are arranged in order of species name, chromosome number in the division of 2n (diploid) and n (haploid), remarks, observer and reference in the following order:

Species	Chrom.-number		Remarks	Observer	Reference
	2n	n			
Ovis aries	54 s	27 ♂ (1,11)	X-Y ♂	Makino '43, '44	Cyt.13;Z.M.(Jap.)56

This example shows that the chromosome number of the sheep, Ovis aries, is 54 in the spermatogonial division and 27 in the first and second spermatocyte divisions, having the X-Y complex of the sex chromosomes in the male, and that the reference to this work may be found in an article by Makino, 1943, published in Cytologia, Volume 13 and in another article by the same author, 1944, published in the Zoological Magazine (Japan), Volume 56. The small letter of the alphabet indicates the order of appearance of the papers, where more than two papers were published by the same authors on one and the same subject in the same year.

Most of the important abbreviations used in the table and in the column of reference will be found in the accompanying tables.

Because of the extreme difficulty of doing bibliographical work in postwar Japan under the extremely unfavorable conditions for making contact with foreign investigators, probably even a great effort to make a complete and correct bibliography has been unsuccessful. I believe there are papers missing from my files that should be added. Since I do not doubt that this compilation is far from being complete, I sincerely hope that workers in various parts of the world will call oversights to my attention. These corrections can be added to a future revision of the list. I also would appreciate the correction of any errors of citation.

* * *

Acknowledgment: I have much pleasure in taking opportunity to express my sincere thanks to Professor Warren H. Leonard of the Colorado A. & M. College who was in Japan in 1945-46 and again in 1948-49, and who kindly advised me to publish the second edition of the chromosome list. Because the labor of the work has been greatly lessened by his constant encouragement, I wish to express my gratitude to Emeritus Professor K. Oguma. My warm acknowledgment also is due to Professor F. Schrader of the Columbia University, for the Foreword to the first edition, and for aid in accomplishing the work. Especially, I wish to express to the co-workers of my institute my sincere thanks for valuable assistance.

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July, 1950
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ZOOLOGISCHES INSTITUT

NATURWISSENSCHAFTLICHE FAKULTAT

HOKKAIDO KAISERLICHE UNIVERSITAT

Sapporo, Japan

Number of Species in which the Chromosome Number has been recorded

INVERTEBRATA ..... 2754 spp.

	Number of species
Mesozoa	3
Porifera	7
Coelenterata	23
Plathelminthes	110
Nemertini	7
Trochelminthes	4
Annelida	72
Mollusca	135
Nemathelminthes	72
Molluscoidea	7
Echinodermata	29
Arthropoda	2165
Crustacea	156
Acerata	158
Insecta	1820
Collembola	3
Thysanura	3
Orthoptera	428
Dermaptera	9
Plecoptera	16
Isoptera	4
Embioptera	2
Psocoptera	1
Mallophaga	2
Anoplura	6
Ephemeroptera	2
Odonata	62
Thysanoptera	1
Homoptera	155
Heteroptera	351
Neuroptera	54
Mecoptera	5
Trichoptera	25
Lepidoptera	325
Coleoptera	180
Strepsiptera	1
Hymenoptera	69
Diptera	240
Aphaniptera	2
Prochordata	7

VERTEBRATA ..... 563 spp.

Cyclostomata	2
Pisces	95
Amphibia	108
Reptilia	99
Aves	33
Mammalia	176

Abbreviations used in the table

chrom.	=chromosome
div.	=division
J_1	=the largest J-shaped chromosome
m	=somatic cell
o	=oogonium
parth.	=parthenogenetic
post.	=post-reduction
pre.	=pre-reduction
R	=long rod-shaped chromosome
R_1	=the longest rod-shaped chromosome
R_2	=the second longest rod-shaped chromosome
r	=rod-shaped chromosome of medium size
sex-chrom.	=sex-chromosome
s	=spermatogonium
V	=large V-shaped chromosome
V_1	=the largest V-shaped chromosome
V_2	=the second largest V-shaped chromosome
v	=V-shaped chromosome of medium size
X	=X-chromosome
Y	=Y-chromosome
♂ (1)	=primary spermatocyte
♂ (11)	=secondary spermatocyte
♀ (1)	=primary oocyte
♀ (11)	=secondary oocyte

The list of abbreviations of the titles of journals
used in the column of reference

A.A.	Anatomischer Anzeiger.
A.A.M.	Archives d'Anatomie microscopique.
A.B.	Archives de Biologie.
A.Hf.	Anatomische Hefte.
A.I.A.E.	Archivio Italiano di Anatomia e di Embriologia (Firenze).
A.J.A.	American Journal of Anatomy.
A.M.A.	Archiv für mikroskopische Anatomie.
A.N.	American Naturalist.
A.R.	Anatomical Record.
Arch. Jul. Klaus-Stift. Vererb.	Archiv der Julius Klaus-Stiftung für Vererbungsforschung, Sozialanthropologie und Rassen-hygiene.
A. Zf.	Archiv für zellforschung.
A.Z.E.G.	Archives de Zoologie experimentale et générale.
Abstr. Sci. Res.	Abstracts of Scientific Researches, subsidized by the Ministry of Education, Tokyo.
B.B.	Biological Bulletin.
B.B. Fr. Bel.	Bulletin Biologique de la France et de la Belgique.
B.Z.	Biologisches Zentralblatt.
Bot. & Zool. (Tokyo)	Botany & Zoology (Tokyo) (In Japanese).
C.R.A.S.	Comptes Rendus de l'Academie des Sciences (Paris).
C.R.S.B.	Comptes Rendus des Seances de la Societé de Biologie(Paris).
Chrom.	Chromosoma.
Cyt.	Cytologia (Tokyo).
Genet.	Genetics.
Hered.	Hereditas.
Iden-Sogo-Kenkyu	(Papers from the Committee for Research in Genetics, Tokyo).
Igaku & Seibutsugaku	(Abstract journal on Medicine and Biology, Tokyo) (In Japanese).
Jap. J.G.	Japanese Journal of Genetics.
Jap. J.Z.	Japanese Journal of Zoology.
J.E.Z.	Journal of Experimental Zoology.
J.F.S. Hokkaido I.U.	Journal of the Faculty of Science, Hokkaido Imperial University.
J.G.	Journal of Genetics.
J.G.P.	Journal of General Physiology.
J.H.	Journal of Heredity.
J.M.	Journal of Morphology.
J.S. Hiroshima U.	Journal of Science of the Hiroshima University.
La Kromosomo	(Journal of chromosomics, in Japanese, Tokyo).
L.C.	La Cellule.
Luiz de Queiroz	Anais da Escola Superior de Agricultura "Luiz de Queiroz" (Sao Paulo, Brasil).
M.Z. Ital.	Monitore Zoologico Italiano (Firenze).
Nippon Gakuzyutsu-Shinkokai	(Proceedings of Japanese Association of Advance of Science) (In Japanese)
P.I.A. (Tokyo)	Proceedings of the Imperial Academy (Tokyo).
P.R.S. Lon.	Proceedings of the Royal Society (London).

Q.J.M.S.	Quarterly Journal of Microscopical Science.
R. Suisse Z.	Revue Suisse de Zoologie.
Roux	Archiv für Entwicklungsmechanick.
Sci.	Science, New York.
S.R. Tokyo B.D.	Science Reports of the Tokyo Bunrika Daigaku.
Seibutu	(Journal of biology, published in Japanese, Sapporo).
Z.A.	Zoologischer Anzeiger.
Z.A.E.	Z eitschrift für Anatomy und Entwicklungsgeschichte.
Z.B. (Moskaw)	Zeitschrift für Biology (Moskaw).
Z.I.A.V.	Zeitschrift für induktive Abstammungs-und Vererbungslehre.
Z.M. (Jap.)	Zoological Magazine (Dobutsugaku Zasshi) (Japan).
Z.M.A.F.	Zeitschrift für mikros.-anatomische Forschung.
Z.W.Z.	Zeitschrift für wissenschaftliche Zoologie.
Z.Z.M.A.	Zeitschrift für Zellforchung und mikroskopische Anatomy.
Z. Jb.	Zoologischer Jahrbuch.

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An Atlas Of The

CHROMOSOME NUMBERS IN ANIMALS

MESOZOA

Species	Chromosome Number 2n*	n	Remarks	Observer	Reference
Dicyemenna gracile	---	Ca 30♀ (1)	---	Hartmann '07	Mem. Sci. Acad. Roy. Belg. 1.
Haplozoon armatum	100? m	---	---	Dogiel '08	Z.W.Z. 89.
Rhopalura ophiocomae	6 m	3♀ (1,11)	---	Caullery & Lavellee '08	A.Z.E.G. 8.

PORIFERA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Clathria coriacea	Ca 16 m	---	---	Robertson & Minchin '10	Q.J.M.S. 55.
Grantia compressa	8-10s 8-10o	8-10♀ (1)	---	Dendy '14	Q.J.M.S. 60.
Grantia compressa pennigera	26 m	13♂(1) 13♀(1)	---	Duboscq & Tuzet '33, '37	A.Z.E.G. 73,79.
Reniera simulans	16 m	8♂(1)	---	Tuzet '30	C.R.S.B. 103.
Spongilla lacustria	10-12 m	---	---	Müller '11	Roux 32.
Sycandra raphanus	16 m 8 o	8♀(1,11)	---	Jörgensen '10	A.Z. 4.
"	32 m	---	---	Mass '99	A.A. 16.
Sycon ciliatum	26 m	13♀(1)	---	Duboscq & Tuzet '37	A.Z.E.G. 79.

COELENTERATA
HYDROZOA
Hydroida

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
TUBULARIO-ANTHOMEDUSAE					
Clava leptostyla	---	12♀(1,11)	---	Hargitt '16	J.M. 27.
Clava squamata	---	Ca 16♀(1)	---	Harm '02	Z.W.Z. 73.

* In the column of 2n, s, o and m denote spermatogonium, ocgonium and somatic cell. respectively.

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Clavatella prolifera (Eleutheria dichotoma)	---	6♀(1)	---	Müller '08	Z.W.Z. 80.
Cordylophora lacustris	---	10 12♀(1)	---	Morgenstern '01	Z.W.Z. 70.
Eudendrium ramosum	---	13♀(1)?	---	Beckwith '14	J.M. 25.
Hydra circumcincta	30 m	15♂(1)	Sex chrom. unknown	Niiyama '43, '44	Jap. J.G. 19; Cyt. 13.
Hydra dicecia (H. fusca, H. viridis)	12 s	6♂(1,11) 12♀(1), 6♀(11)	---	Dowing '05, '09	Z.Jb. 21, 28.
Hydra grisea	---	12-14♀(1)	---	Brauer '91	Z.W.Z. 52.
"	---	16♀(1)	---	Wager '09	B.B. 18.
Hydra vulgaris attenuata	32 s 32 o 32 m	16♂(1)	Sex chrom. unknown	Niiyama '43,'44	Jap. J.G. 19; Cyt. 13.
Hydractinia echinata	12-16 m	---	---	Smallwood '09	B.B. 17.
"	---	14♀(1)?	---	Beckwith '14	J.M. 25.
Pelmatohydra obligactis	12 m	---	---	McConnell '32, '36	Z.M.A.F. 28; Roux 135.
"	30 m	---	Sex chrom. unknown	Niiyama '43,'44	Jap. J.G. 19; Cyt. 13.
"	12-14 m	---	---	Wermel '26	Z.Z.M.A. 4.
Pennaria tiarella	---	10-14♀(1)	---	Hargitt '09	Bull.Mus.Comp. Zool. Harvard, 53.
"	14 m ?	---	---	Smallwood '09	B.B. 17.
Tiara sp.?	28 m	14♀(1,11)	---	Boveri '90	Jena Z. 17.
Tubularia mesembryanthemum	---	12♀(1)	---	Brauer '91	Z.W.Z. 52.
Campanulario-Leptomedusae					
Aequorea forskalea	12 m	6♀(11)	---	Häcker '92	A.M.A. 40.
Campanularia flexuosa	20 m	10♀ (1)	---	Hargitt. '13	J.M. 24.
Obelia geniculata	34 o	17♀(1)	X-Y♀?	Faulkner '29	C.J.M.S. 73.
Gonothyrea loveni	---	8♀(1)	---	Wulfert '02	Z.W.Z. 71.

COELENTERATA (continued)

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Limnomedusae					
Craspedacusta ryderi	---	126(1)	---	White '30	B.B. 59.
Gonioenmus murbachii	24 25 s Ca 24o Ca 24m	Ca 126(1,11)	12 in ♀ pronucleus	Bigelow '07	Bull.Mus.Comp. Zool.Harvard, 48.

TRACHYLINA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Trachomedusae					
Aglantha digitalis	16 o	8o(1,11)	---	Hargitt '17	J.M. 28.
Narcomedusae					
Cunina proboscidea	---	28♂(1) 30♀(1)	---	Stschelkanowzew '06	Mitt.Zool.St. Neapel, 17.

SCYPHOMEDUSAE

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Semaeostomae					
Aurelia flavedula	18-20m	9-10♀(1)	---	Hargitt '10	J.M. 21.

PLATYHELMINTHES
CESTODA*

Species	2n	n	Remarks	Observer	Reference
Avitellina centripunctata	---	4(?)♀(1)	---	Gough '11	Q.J.M.S. 56.
Moniezia expansa M. planissima	)12-14(?)m)	6-9(?)♂(1)	---	Child '07	B.B. 12
Taenia serrata	---	13-15♀(1) (6-16♂)	---	Von Janicki '07	Z.W.Z. 87.

TREMATODA
DIGENEA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Brachycoelium salamandrae (B. crassicole)	20 s,o 20 m	10♂(1) 10♀(1)	---	Von Kemnitz '13	A.Zf. 10.
Cryptocotyle lingua	12 s, ♂ m 12 o 12 m	6♂(1)	---	Cable '31,'34	Q.J.M.S.74,76.

* Jones, A. W. 1945. Journ. Parasitol. 31, which concerns with cytology of 15 species of Cestoda, cannot be accessible.

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Dicrocoelium (Distomum) lanceolatum	20 o	10♀(1,11)	---	Goldschmidt '08	A.Zf. 1.
"	20 s	20♂(1,11)	---	Dingler '10	A.Zf. 4.
Diplodiscus temporatus	16 m Parth.	16♀(1)	---	Cary '09	Z.Jb. 28.
Distomum hepaticum	---	6-8♀(1)	---	Henneguy '06	Arch. d'Anat. Micr. 9.
D. turgidum	16 m	9♀(1,11)	---	Levy '14	A.M.A. 85.
Fasciola hepatica	12 o,m	6♀(1,11)	---	Schellenberg'11	A.Zf. 6.
Fasciola hepatica	10(pair)s,o	10(pair)♂, 5(pair)♂ 9(1) (11)	---	Dehorne '11	A.Z.E.G. 9.
Lophotaspis corciculae	---	9 (1,11)	---	Moriya '14	J.S.Hirosima U.Ser.B,10
Paragonimus kellicotti	16 s	8♂(1)	---	Chen '37	Trans. Am.Micr. Soc. 56.
Parorchis acanthus	22 s	11♂(1) 11♀(1,11)	---	Rees '39	Parasit. 31.
Pneumonoeces mediopbexus	22 s,o 22 m	11♂(1,11) 11♀(1,11)	Sex chrom. unknown	Pennypacker '36	A.B. 47.
P. similiplexus	22 s(20-22)	11♂(1) 11♀(1)	---	Pennypacker '40	J.M. 66.
Schistosomum haematobium (Bilharzia haematobia)	14 s	8♂,♀(1) 6,8♂(11)	X_1X_2-O♂	Lindner '14	A.Zf. 12.
Sch. japonicum	---	8♂(1) 7,8♂(11)	X-O♂	Faust & Meleney '24	Am.J.Hyg. Monogr. 3.
"	14 s	8♂(1) 6,8♂(11)	X_1X_2-O♂	Severinghaus '28	Q.J.M.S. 71.
"	16 s 16 c	8♂(1,11)	Sex chrom. unknown	Ikeda & Makino '36	J.F.S. Hokkaido I.U.Ser. VI, 5
Schistosomum (Bilharzia) mansoni	16 s,o	---	Sex chrom. unknown	Niyamasena '40	Zeit. Parasit 11.
Zoogonus mirus	10 s,o	10♀(1,11)	Reduction in 2nd div.	Goldschmidt '05, '08	Z.Jb.21;A.Zf.2.
"	22-26 m	11-13♀(1,11)	---	Schreiner '08	Skr.Vidensk-Selsk. Christiana, Math.-Nat. 1.

TREMATODA (continued)

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Zoogonus mirus	12 s	6♂(1)	---	Gregoire '09	L.C. 25.
	12-14 m	6♀(1,11)	---		
"	11-14 ♂	6-7♀(1)	---	Wassermann '11, '12, '13	Sitz.Ges.Morph. Phys.München, 27; Verh.Anat. Ges.26;A.M.A. 83.
	11-14 m (12)	6♀(11)			

MONOCOENEA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Gyrodactylus elegans	8 m	3(?)♀(11)	---	Von Janicki '03	Z.A. 26.
"	---	8♂(1,11)	Reduction in 2nd div.	Kathariner '04	Z.Jb.Suppl. 7.
"	12 s				
	12 m	6♂(1,11)	---	Gille '14	A.Zf. 12.
Polystomum integerrimum	Ca 20 m	10♂(1,11)	---	Halkin '02	A:B. 18.
"	8 m	8♂(1,11)	Reduction in 2nd div.	Goldschmidt '02	Z.W.Z. 71.
"	20 m	10♂(1,11)	---	Minouchi '36	Z.Z.M.A. 24.

TURBELLARIA
ACOELA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Aphanostoma diversicolor	20-30	---	---	Ruebush '38	Z.A.122.
Convoluta sp.	20-30	---	---	Ruebush '38	Z.A.122.
Polychoerus candatus	Ca 31	---	---	Gardiner '98	J.M.15.

RHABDOCOELIDA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Nctandropora					
Catenula virginiana	20-40	---	---	Ruebush '38	Z.A. 122.
Fuhrmannia sp.	16-30	---	---	Ruebush '38	Z.A. 122.
Rhynchoscolex simplex	20-30	---	---	Ruebush '38	Z.A. 122.
Stenostomum grandi	20-40	---	---	Ruebush '38	Z.A. 122.
Stenostomum sp.	20-40	---	---	Ruebush '38	Z.A. 122.

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
OPISTHANDROPORA					
Macrostomum beaufortensis	6 s	3♂(1)	---	Ferguson '37	Z.A. 120.
M. hustedi	12 m	---	Polyploid?	Jones '44	J.M. 75
M. hystrix	---	2♂(1)	---	Luther '05	Festschr. Palmen, 5.
M. tuba	6 s,o 6♂ m	3♂(1,11)	---	Phillips '36	Z.A. 114.
M. virginianum	6 s	3♂(1)	---	Ferguson '37	Z.A. 119.
M. viride	---	2♂(1)	---	Luther '05	Festschr. Palmen, 5.
Microstomum bispiralis	16 s	8♂(1)	---	Stirewalt '37	Z.A. 119.
LECITHOPHORA: DALYELLIOIDEA					
Castrella truncata	4 s	2♂(1)	---	Ruebush '38	Z.A. 122.
Dalyellia abursalis	4 s	2♂(1)	---	Ruebush '37	Z.A. 119.
D. armigera	4 s	---	---	Meixner '15	Z.Jb. 38.
D. rossi	4 s	2♂(1)	---	Ruebush '37	Z.A. 119.
D. triangulata	4 s	2♂(1)	---	Ruebush '38	Z.A. 122.
D. virginiana	4 c	2♂(1)	---	Ruebush '37	Z.A. 119.
D. viridis (Vortex viridis)	4 s, m	2♂(1,11)	---	Lepeschkin '10	Biol.Zeits Moscow, 1.
"	4 m	---	---	Hein '28	Z.W.Z. 130.
Dalyellia sp.	4 s	2♂(1)	---	Ruebush '38	Z.A. 122.
Dalyellia sp.	4 s	2♂(1)	---	Ruebush '38	Z.A. 122.
Dalyellia sp.	4 s	2♂(1)	---	Ruebush '38	Z.A. 122.
Dalyellia sp.	4 s	2♂(1)	---	Ruebush '38	Z.A. 122.
Paravortex cardii	4 m	2♀(11)	---	Hallez '08 a, b	C.R.A.S. 147; A.Z.E.G. 9.
P. gemellipara	8 m	4♀(11)	---	Ball '16	J.M. 27.
—(Graffilla gem.)	8 m	4♀(1)	---	Patterson '12	B.B. 22.
Provortex affinis	6 s	3♂(1)	---	Ruebush '35	Z.A. 111.
Provorticid	6-8 m	---	---	Ruebush '38	Z.A. 122.

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
LECITHOPHORA: TYPHLOPLANOIDA					
Amphibollela virginiana	4 s	26 ♂ (1)	---	Kepner & Ruebush '37	Z.A. 118.
Byrsophlebs sp.	Ca 8 s	---	---	Ruebush '38	Z.A. 122.
Castrada virginiana	6 s	36(1)	---	Kepner, Ruebush & Ferguson '37	Z.A. 119.
Castrada sp.	6 s	36(1)	---	Ruebush '38	Z.A. 122.
Castrada sp.	6 s	36(1)	---	Ruebush '38	Z.A. 122.
Krumbachia minuta	40 m	26 (1)	---	Ruebush '38	Z.A. 122.
Krumbachia (Olisthanella) virginiana	4 s, ♂ m	20(1,11)	---	Senn '35	Z.A. 111.
Mesostoma ehrenbergii	Ca 7	---	---	Schneider '83	Ei u. Befruchtung Breslau, 1983.
"	10 m	5♀(11)	---	Bresslau '04	Z.W.Z. 76.
"	---	5	---	Luther '04	Z.W.Z. 77.
"	10 o	5♀(1,11)	---	Von Voss '14	A.Zf. 12.
"	10 m	---	---	Valkanov '38	Jahrb.Univ. Sofia, Physico-Math. Fak. 34.
M. ehr. ehrenbergii	10 s, ♂ m	3 11 ♂ 4 1 ♂(1)	---	Husted '39	Genet. 24.
				Husted, Ferguson & Stierewalt '39	A.N. 73.
M. ehr. wardii	8 ♂ m	3 11 ♂ 2 1 ♂(1) 4 ♀(1)	---	Husted & Ruebush '40	J.M. 67.
M. lingua	---	3	---	Luther '04	Z.W.Z. 77.
M. lingua	8 m	---	---	Valkanov '38	Jahrb.Univ. Sofia, Physico-Math. Fak. 34.

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Mesostoma sp.	66 ♂ m	36(1)	---	Ruebush '38	Z.A. 122.
Opistomum sp.	8 s	46(1)	---	Ruebush '38	Z.A. 122.
Opistomum sp.	8 s	46(1)	---	Ruebush '38	Z.A. 122.
Phaenocora jucunda	12 s, ♂ m	66(1,11)	---	Martin '22	A.Zf. 16.
Ph. kepneri	4 s	26(1)	---		
Ph. lutheri	4 s	26(1)	---	Ruebush '38	Z.A. 122
Ph. virginiana	4 s	26(1)	---		
Rhaenocora sp.	4 s	26(1)	---		
Promesostoma marmoratum	12 s	66(1)	---	Ruebush '38	Z.A. 122.
Prorhynchella minuta	4 s	26(1)	---	Ruebush '38, 39	Z.A. 122, 127.
Protoplanellid (New Haven)	6 s	36(1)	---	Ruebush '38	Z.A. 122.
Rhynchomesostoma rostratum	4 s	26(1)	---	Ruebush '38	Z.A. 122.
Solenopharynx sp.	4 s	26(1)	---	Ruebush '38	Z.A. 122.
Trigonostomum lillei	6 s	36(1)	---	Ruebush '38	Z.A. 122.
Typhloplana viridata	6 s	36(1)	---	Ruebush '38	Z.A. 122.
LECITHOPHORA: KALYPTORHYNCHIA					
Acrorhynchus reorobatus	4 s	26(1)	---	Ruebush '38	Z.A. 122.
Gyratrix hermaphroditus	4 s	26(1)	---	Ruebush '38	"
Microkalyptorhynchus virginianus	6 s	36(1)	---	Ruebush '38	"
Polycystis goettei	16 s	86(1)	---	Ruebush '38	"

ALLOECOELA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Bothrioplana semperi	20-30	---	---	Ruebush '38	Z.A. 122.
"	20 ♂m	10 ♂(1)	Parthenogenetic, 2n = 40 in cleavage	Reisinger '40	Chrom. l.
Geocentrophora apolanatus	20-30	---	---	Ruebush '38	Z.A. 122.
Monocelis fusca	6 s	3 ♂ (1)	---	Ruebush '38	"
Plagiostomum stellatum	10 s	5♂(1)	---	Ruebush '38	"
Prorhynchus stagnalis	20-30	---	---	Ruebush '38	"
Pseudostomum sp.	10-12	---	---	Ruebush '38	"

TRICLADIDA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Bdellocura candida	12 s,o	6♂(1,11) 6♀(1)	Sex chrom. unknown	Pennypacker '38	J.M. 63.
Curtisia foremanii	12 s,o	6♂(1,11) 6♀(1)	"	Pennypacker '38	J.M. 63.
Dendrocoelum lacteum	16 m	8♀(1,11)	4 in egg nucleus	Mattiesen '04 a,b	Z.A. 27; Z.W.Z. 77;
"	---	8♂(1,11)	---	Schleip '07	Z.Jb. 24.
" (Planaria lactea)	16 s,o	8♂(1,11) 8♀(1)	---	Arnold '09	A.Zf. 3.
"	14 s	7♀(1)	---	Gelei '13	A.Zf. 11.
Planaria alpina	20-24 s	---	---	Rappeport '15	A.Zf. 14.
P. gonocephala	16 s,o	8♂(1,11) 8♀(1)	---	Schleip '06,'07	Z.Jb. 23, 24.
P. polychroa	16 m	8♀(1,11)	4 in egg nucleus	Mattiesen '04 a,b	Z.A. 27; Z.W.Z. 77.
P. simplissima	8 s 6 m	3-4♂(1,11) 3-6♀(1,11)	---	Stevens '04	Proc. Acad. Nat. Sci. Phila. 56.
P. torva	16 m	8♀(1,11)	4 in egg nucleus	Mattiesen '04 a,b	Z.A. 27; Z.W.Z. 77.
Polycelis nigra	---	8♂(1,11)	---	Schleip '07	Z.Jb. 24.
Procerodes gerlachei	12 s,m	6♂(1,11)	---	Böhmig '07	A.B. 23.

POLYCLADIDA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Cycloporus papillosus	16m	8♀(I,II)	---	Francotte '97,'98	Mem. Cour. Acad. Roy. Belg. 55; A.Z.E.G. 6.
Eustylochus ellipticus	20m	10♀(1,11)	---	Van Name '99	Trans. Conn. Acad. Sci. 10.
Leptoplana Tremellaris	16m	8♀(1,11)	---	Francotte '97	Mem. Cour. Acad. Roy. Belg. 55.
Notoplana humilis	---	10♀(1,11)	---	Kato '40	Jap. J.Z. 8.
Oligoclades auritus	---	8♀(1)	---	Francotte '97	Mem. Cour. Acad. Roy. Belg. 55.
Planocera inquilina	---	9-10♀(11)	---	Wheeler '94	J.M. 9.
"	---	10♀(1,11)	---	Patterson & Wieman '12	B. B. 23.
P. nebulosa	20m	10♀(1,11)	---	Van Name '99	Trans. Conn. Acad. Sci. 10.
Prostheceraeus vittatus	12m	6♀(1,11)	---	Klinckowstroem '97	A.M.A. 48
Prostheceraeus vittatus	---	6♀(1,11)	---	Francotte '97, '98	Mem. Cour. Acad. Roy. Belg. 55; A.Z.E.G. 6.
"	---	6♀(1)	---	Gerard '01	L.C. 18.
Prosthiostomum siphunculus	16m	8♀(1,11)	---	Francott '98	A.Z.E.G. 6.
Stylochus pelidium	---	9♀(1)	---	Gerard '01	L. C. 18.
Thysanozoon brocchi	18s 18m	9♂(1) 9♀(1,11)	---	Van Der Stricht '97, '98	Verh. Anat. Ges. 11; A.B. 15.
"	18m	9♀(1,11)	---	Schockaert '02; '05	L.C. 20, 22.

NEMERTINI
DIMYARIA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Tetrastemma vermiculus	---	4♂(1) 2♀(11)	---	Lebedinsky '97a,b	A.M.A. 49; B.Zbl. 17.

TRIMYARIA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Cerebratulus lacteus	---	5♂(11)	---	Wilson, O.B. '00	Q.J.M.S. 43.
"	36-38m	18-19♀(1)	---	Yatsu '07, '09	B.B. 13; J.M. 20.
C. Marginatus	32m	16♀(1,11)	---	Coe '99	Z.Jb. 12.
"	---	16♂(1) 16♀(11)	---	Kostanecki '02	Bull. Int. Acad. Sci. Cracovie, 1902.
Lineus gesserensis	---	8♀(11)	---	Arnold '99	Trav. Soc. Imp. Nat. St. Petersb. 9.
L. lacteus	32?m	16?♀(11)	---	Meek '13	Phil. Trans. Roy. Soc. London, B. 203.
L. ruber	16m	8♀(1)	8 in sperm-and egg-nucleus	Nussbaum & Oxner '13	Z.W.Z. 107.
Micrura caeca	32m	16♀(1)	---	Coe '99	Z.Jb..12.

TROCHELMINTHES
ROTIFERA

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Asplanchna amphora	---	i)26♀(1), parth. ♀ egg.	1 polar body, no reduction	Whitney '29	J.M. 47.
		ii)26♀(1), 13♀(11), parth.♂ egg	2 polar bodies and reduction		

-11-

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
		iii)26♀(1), 13♀(11), bisexual egg	As above		
		iv)13♂(1,11) male meiosis	13 in ♂ soma		
A. intermedia		i)24♀(1) parth. ♀ egg.	1 polar body, no reduction	Tauson '21,'24,'27	Bull. Inst. Biol. Exp. 1; Zeit. Wiss. Biol. 1; Z.Z.M.A. 4.
		ii)24♀(1) 12♀(11), parth. ♂ egg	2 polar bodies and reduction		
	24♂m 24s	12♂(1)	11 div. lacking		
A. priodonta	---	i)16♀(1)	Parth. ♀ egg(2n)	Storch '24	Z.Jb. (Anat.)45.
		ii)8♀(11)	Parth. ♂ egg(n)		
Hydatina senta	---	i)10-12♀ (1),parth. ♀ egg	No polar body	Lenssen '98 a,b	L.C. 14;Z.A.21
		ii)5♀(1), parth. ♂ egg	1 polar body		
		iii)12♀(1), winter egg	2 polar bodies		
Hydatina senta	---	i)22-25♀ (1),parth. ♀ egg	1 polar body	Whitney '09	J.E.Z. 6.
		ii)11-13♀ (1),parth. ♂ egg	2 polar bodies		
		iii)14♀(1), winter egg	As above		
"	---	i)12♀(1), parth. ♀ egg	Fertilized eggs produce ♀,	Shull '21	B.B. 41.
		ii)6♀(11), parth. ♂ egg	unfertilized eggs ♂		

ANNELIDA
ARCHIANNELIDA

Species	Chromosome Number 2n	n	Remarks	Observe	References
Dinophilus apatris	20m	10♂(1,11) 10♀(1,11)	—	Nachtsheim '19	A.M.A. 93.
D. gyrociliatus	20m	20♀(1) 10♀(11)	---	Shearer '11, '12	J. Marine Biol. Ass. 9; Q.J.M.S. 57.
Histriobdella homari	---	8♀(1)	—	Shearer '10	Q.J.M.S. 55.
Protodrilus purpureus	—	4♀(1,11)	—	Pierantoni '08	Fl. Fau. Golfes Neapel, 31.

CHAETOPODA
OLIGOCHAETA

Species	Chromosome Number 2n	n	Remarks	Observe	References
Allolobophora foetida	22o	11♀(1,11)	—	Foot '98	J.M. 14.
"	22o	11♀(1,11)	---	Foot & Strobell '05, '10	A.J.A. 4; A.Zf. 5.
"	22m	11	---	Monne '25, '27	Bull. Int. Acad. Polonaise, Sci. Lett. Ser. B.
A. chloratica	32m	—	—	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
A. icterica	32m	—	—	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
A. caliginosa	36m	—	—	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
A. nocturna	36m	—	—	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
A. ierestris	36m	—	—	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
Branchiobdella astaci	16(?)s	8♂(1)	—	Wendrowski '28	Z.Z.M.A. 8.

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
Dendrobaena subrubicunda	68m	---	---	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
D. rubida	34m	---	---	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
Eiseniella tetraedra	72m	---	---	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
Eisenia faetida	22m	---	---	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
E. venata	36m	---	---	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
E. rosea	56-58m	---	---	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
Enchytraeus adriaticus	24o	---	---	Vejdowsky '07	Kgl. Böhm. Ges. Wiss. Prag.
E. humicultor	32s 32o	16♀(1)	---	Vejdowsky '07	Kgl. Böhm. Ges. Wiss. Prag.
Fridericia hegemon	64s 64o	32♀(1)	---	Vejdowsky '07	Kgl. Böhm. Ges. Wiss. Prag.
Heterochaetera glandularis	56s	---	---	Yamaguchi '46	Seibutu 1.
Hyodrilus coccineus	---	16♀(1)	---	Vejdowsky & Mrazek '03	A.M.A. 62.
Ilyogenia santixavieri	---	Cal100♂(1,11) (macrocyte) 10♂(1,11) (microcyte)	Functional gametes develop from microcytes	Cernosvitov '30	Z.Z.M.A. 12.
		Cal20♀(1,11) (macrocyte) 10♀(1,11) (microcyte)			
Lumbricus agricola	---	16♂(1,11)	---	Bugnion & Popoff '05	A.Z.E.G. 2.
L. rubellus	36m	---	---	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
L. terrestris	36m	---	---	Muldal '49	John Innes Hort.Inst. 39 Ann. Rep.(1948)

CHAETOPODA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	Reference
L. terrestris	32s	16♂(1,11)	---	Calkins '95	J.M. 11.
Lumbricus sp.	32s	16♂(1,11)	---	Meek '13	Phil. Trans. Roy. Soc. London, B. 203.
Mesenchytraeus flavus	---	16♀(1)	---	Vejdowsky '07	Kgl. Böhm. Ges. Wiss. Prag.
M. setosus	32o	16♀(1)	---	Vejdowsky '07	"
Octolasium cyanoum	114m	---	---	Muldal ' 49	John Innes Hort.Inst. 39 Ann. Rep.(1948)
Rhynchelmis limosella	64m	32♀(1,11)	---	Vejdowsky'07 Vejdowsky & Mrazek '03	A.M.A. 62.
Tubifex bavaricus	20o 20m	---	---	Oschmann '14	A.Zf. 12.
T. rivulorum	Ca100m	Ca110♀(1)	---	Gathy '00	L.C. 17.

POLYCHAETA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Amphitrite sp.	22m 11m(Parth)	11♀(1,11)	---	Scott '06	J.E.Z. 3.
Aricia sp.	18m 9m(Parth)	9♀(1,11)	---	Kastanecki '09	Bull. Int. Acad. Sci. Cracovie
Chaetopterus pergamentaceous	18m	9♀(1,11)	---	Mead '98	J.M. 14.
"	---	9♀(1,11)	---	Lillie '06	J.E.Z. 3.
Lanice conchylega	6m	6♂(1) 3♂(11)	---	De'Horne '11	A.Z.E.G. 9.
Nereis limbata	20-30m	14♀(1)	---	Bonnevie '07, '08	B.B. 13: A.Zf. 2.
Ophryotrocha gracilis	10s,o 10m	5♂(1,11) 5♀(1,11)	---	Huth '33	Z.Z.M.A. 20.
O. hartmanni	10s,o 10m	5♂(1,11) 5♀(1,11)	--- ---	Huth '33	"
O. Puerilis	4s,m	4♂(1) 2♂(11)	---	De'Horne '10, '11	Z.A. 36;A.Z.E.G. 9.

Species	Chromosome Number 2n	n	Remarks	Observer	References
O. puerilis	8s,m	4♂(1,11)	—	Gregoire & Deton '06	L.C. 23.
"	4s,o 4m(8)	2♀(1,11)	—	Korschelt '95a,b.	Verh. deuts. Zool. Ges. 5; Z.W.Z. 60.
"	8s,o 8m	4♂(1,11) 4♀(1)	—	Schreiners '06	A.A. 29.
"	8s,o 8m	4♂(1,11) 4♀(1,11)	—	Huth '33	Z.Z.M.A. 20.
Platynereis megalops	—	14♀(1)	—	Just '15	J.M. 26.
Sabellaria spinulosa	8s 8m	8♂,♀(1) 4♂,♀(11)	—	De'Horne '10,'11	C.R.A.S. 150; A.Z.E.G. 9.
Saccocirrus major	8s	4♂(1,11) 4♀(1,11)	—	Hempelmann '13	Zoologica 26.
"	18s,o 18m	9♂(1,11) 9♀(1)	—	Von Baehr '13	Z.A. 43.
S. papillocercus	6m	—	—	Pierantoni '06	Mitt. Zool. St. Neapel, 18.
"	8s	4♂(1,11) 4♀(1,11)	—	Hempelmann '13	Zoologica 26.
Serpula crater	—	Cal4♀(1)	7 in ♂ and ♀ promuclei	Soulier '06	A.Z.E.G. 5.
Tomopteris elegans	10o	5♀(1)	—	Senna '11	A.I.A.E. 9.
"	—	4♀(1)	—	Wallace '04	Brit. Ass. Adv. Sci. 73.
T. onisciformis	18s	9♂(1)	—	Schreiners '06	A.B. 22.
Myzostoma glabrum	24m	12♀(1,11)	—	Wheeler '97	A.B. 15.

HIRUDINEA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Acanthobdella peledina	---	8♂(1)	---	Wendrowski '28	Z.Z.M.A. 8.
Clepsine complanata	---	20♀(1)	---	Gathy '00	L.C. 17.
Glossosiphonia complanata	26s	13♂(1,11)	---	Wendrowski '28	Z.Z.M.A. 8.
G. concolor	28s,o	14♂(11)	---	Wendrowski '28	"
G. heteroclita	16s,o 16m	8♂(1,11)	---	Wendrowski '28	"
G. papillosa	16s,o 16m	8♂(11)	---	Wendrowski '28	"
Haemopis sanguisuga	---	13♀(1)	---	Wendrowski '28	"
Henridepsis marginata	32s,m	16♂(11)	---	Wendrowski '28	"
Herpobdella atomaria	16(?)o	8♀(1)	---	Wendrowski '28	"
H. bistriata	18s	9♂(11)	---	Wendrowski '28	"
Nephelis vulgaris	16o	8♀(1)	---	Jörgensen '08	A.Zf. 2.
Pisciola sp.	---	16♀(1)	---	Jörgensen '13	A.Zf. 10.
Protoctepsis tesselata	16m	8(?)	---	Wendrowski '28	Z.Z.M.A. 8.

ECHIUROIDEA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Thalassema mellita	---	Cal2♀(1) 16-17♀(11)	---	Bonnevie '08	A.Zf. 2.
"	24m	12♀(1)	---	Griffen '99	J.M. 15.
"	12m (Parth.)	12♀(1,11)	---	Lefevre '06, '07	Sci.23; J.E.Z. 4.
Urechis caupo	36m	18♀(1,11)	---	Tyler '32	B.B. 63.

SIPUNCULOIDEA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Phascolosoma gouldii	20m	10♀(1,11)	---	Gerould '04, '06	A.Z.E.G. 2; Z.Jb. 32.
P. vulgare	20m	10♀(1,11)	---	Gerould '04, '06	"
Sipunculus nudus	---	10♀(1)	---	Gerould '06	Z.Jb. 23.

CHAETOGNATHA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Sagitta bipunctata	---	8♂(1,11)	---	Bolles-Lee '88	L.C. 4.
"	18s	9♂(1,11)	---	Bordas '12, '14	L.C. 28; Mem. Real. Soc. Espan. Hist. Nat. 10.
"	18m	9♀(1,11)	9 in ♂ pronucleus	Boveri '90	Jena Z. 17.
"	18m	9♀(1)	---	Buchner '09, '10	A.A. 35; Fest. Hertwig, 1.
"	18m	9♀(1)	---	Elpatiewsky '10	Biol. Zeits. (Moskow) 1.

CHAETOGNATHA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Sagitta bipunctata	18s 18m	9♂(1,11) 9♀(1,11)	---	Stevens '03,'10	Z.Jb. 18; J.M. 21
S. elegans	18m	9♂(1,11) 9♀(1)	---	Stevens '05,'10	Z.Jb. 21; J.M. 21.
S. inflata	18m	9♀(1)	---	Buchner '10	Fest. Hertwig. 1.
"	---	9♂(1,11)	---	Stevens '10	J.M. 21.
S. minima	---	9♂(1,11)	---	Stevens '10	J.M. 21.

MOLLUSCA
PELECYPODA
EULAMELLIBRANCHIA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Cumingia tellinoides	---	18♀(1,11)	---	Jordan '10	A.Zf.4.
	36m 18m(Parth.) 50-60m(Parth.)	18♀(1,11)	---	Morris '17, '18	J.E.Z.22; B.B.35.
Cumingia sp.	---	16♀	Polar body	Mackay '27	Trans.Nova Scot. Inst. Sci.17.
Mactra sp.	24m	12♀(1,11)	---	Kostanecki '04, '04,'11	A.M.A.64;Bull. Acad.Sci.Cracovie, 1904;A.M.A.78.
Unio sp.	---	16♀(1,11)	---	Lillie '01	J.M.17.

GASTROPODA
PROSOBRANCHIA*

Species	Chromosome Number 2n	n	Remarks	Observer	References
Bythini atentaculata (=Paludina impura)	34s	17♂(1,11)	---	Ankel '24	Z.Z.M.A. 1.
B. tentaculata	34	17♂(1)	X-0♂	Tuzet '30	A.Z.E.G. 70.
"	22-28s	24-28♂(1)	---	Von Kemnitz '14	A.Zf. 12.

*In the following species the types of the sex chromosomes were only given: Nassa mutabilis (X-Y), Marsenia sp. (X-Y), Turitella terebra (X-Y), Ceritium vulgatum (X-0), Conus europeus (X-0), Columbella rustica (X-0), Neretina fluviatilis (X-0), Vermetus gigas (X-0) (Kuschakewitsch '24, Z.Z.M.A.). Neritina fluviatilis (X-0) (Aleksenko '27, Acad. Sci. Ukraine Mem. Cl. Sci. Phys. Math. 6).

Species	Chromosome Number 2n	n	Remarks	Observer	References
Compeloma decisum	26-28♀m	---	---	Pollister & Pollister'40	A.R. 78. Suppl.
C. ponderocum	28m♂	14	---	Pollister & Pollister'40	A.R. 78. Suppl.
C. rufum	12o	12♀(1,11)	---	Mattox '37	Z.Z.M.A. 27.
C. subsolidum	26-28♀m	---	---	Pollister & Pollister'40	A.R. 78. Suppl.
Carinaria mediterrania	32m	16♀(1,11) 16	---	Boveri '90	Jena Z. 17.
Cerithium vulgatum	Ca 30s	16♂(1)	X-O♂	Kuschakewitsch '21	A.Zf. 15.
"	---	16♂(1,11)	---	Tuzet '30	A.Z.E.G. 70.
Cochlostoma septemspirale	---	12-13	---	Ankel '25	Serckenbergiana 7.
Columbella rustica	---	16+♂(1)	---	Schitz '17	A.Z.E.G. 56.
Conus mediterranea	---	14♂(1)	---	Kuschakewitsch '13	A.Zf. 10.
C. mediterraneus	---	15♂(1) 14,15♂(11)	X-O♂	Tuzet '30	A.Z.E.G. 70.
Crepidula plana	60m	30♀(1,11)	---	Conklin '02	Jour. Acad. Nat. Sc. Phila. 12.
Enteroxenus oestergreni	34o	17♀(1,11)	17 in ♂ pronucleus	Bonnevie '05	A.A. 26.
"	42m	21♂(1,11) 21♀(1,11)	---	Schreiner '07	Vidensk-Selsk. Skr. Math.-Nat. 1907.
Fasciolaria tulipa	---	31?♂	X-O♂	Hyman '23	J.M. 37.
Fulgur carica	---	Ca16♀(1)	---	McMurrich '96	A.A. 12.
Goniobasis lacueata	36s	18♂(1)	---	Woodard '35	J.M. 57.
Hydrobia jenkinsi	20-22m	20-22(1)	---	Rhein '35	Naturwiss. 23.
Liplax subcarinata	26	13	---	Pollister & Pollister '40	A.R. 78. Suppl.
Murex brandaris	---	28♂(1)	---	Lams '34	Bull. Assoc. Anatomistes 1934.

Species	Chromosome Number 2n	n	Remarks	Observer	References
M. trunculus	---	11-12♂(1)	---	Schitz '20	A.Z.E.G. 59.
"	---	14♂(1)	X-0♂	Tuzet '30	A.Z.E.G. 70.
Nassa nitida	---	14♂(1)	X-0♂	Tuzet '30	A.Z.E.G. 70.
Neritina fluviatilis	19s 20o	10♀(1)	X-0♂	Alexenko '28	Z.Z.M.A. 8.
Paludina vivipara	16s	16♂(1) 8♂(11)	---	Auerbach '96	Jena Z. 23.
"	14s	7♂(1,11)	---	Meves '01, '03	Verh. Anat. Ges. 1901; A.M.A. 61.
"	14o 14m	7♀(1)	---	Popoff '07, '08	A.M.A. 70; B. Zb. 28.
Pisania maculosa	---	16♂(1)	X-0♂	Tuzet '27	A.Z.E.G. 67.
Potamopyrgus (Hydrobia) jenkinsi	30-44m	---	---	Peacock '40	Nature 146
Pterotrachea mutica	32m	16♀(1,11)	16 in ♂ pronucleus	Boveri '90	Jena Z. 17.
Theodoxia fluviatilis	18s	9♂(11)	X-Y♂	Tuzet '30	A.Z.E.G. 70.
Tulotoma magnifica	24	---	---	Pollister & Pollister '40	A.R. 78. Suppl.
Valvata piscinalis	20s	---	---	Artom '33	Rend. Acad. Lincei (6) 17.
"	Ca20s	10♂(1)	---	Von Kemnitz '14	A. Zf. 12.
V. tricarinata	18s	9♂(1)	---	Furrow '35	Z.Z. M.A. 22.
Vermetus gigas	---	14♂(1)	---	Kuschakewitsch '13	A. Zf. 10.
Vivipara sp. (malleatus)	18s	9♂(1)	---	Pollister '39	Proc. Nat. Acad. Sci. 25.
Viviparus contectoides	26	13	---	Pollister & Pollister '40	A.R. 78. Suppl.
V. georgianus	24	12	---	Pollister & Pollister '40	A. R. 78. Suppl.
V. intertextus	26	13	---	Pollister & Pollister '40	A.R. 78. Suppl.

Species	Chromosome Number 2n	n	Remarks	Observer	References
V. viviparus	14s	---	---	Ankel '24	Z.Z.M.A. 1.
"	34s	17♂(1)	---	Ankel '24	Z.Z.M.A. 1.

OPISTHOBRANCHIA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Aplysia depilans	---	16♀(1,11)	---	Bochenek '99	Bull. Kcad. Sc. Cracovie 1899.
A. limacina	24m	---	---	Carazzi '05	Arch. Ital. Anat. Emb. 4.
A. punctata	---	16♀(1,11)	---	Janssens & Elrington'04	L.C. 21.
"	24m	---	---	Carazzi '05	Arch. Ital. Anat. Emb. 4.
Creseis acicula	20s 20o 20m 10m	10♂(1,11) 10♀(1,11)	---	Zarnik '11	Verh. deut. Zool. Ges. 21.
Cymbulia peronii	32m	16♀(1)	---	Nekrassof '03,'09	A.A. 24; A.M.A. 73.
"	36	---	---	Zarnik '11	Verh. deut. Zool. Ges. 21
Diaulula sandiegensis	---	12♀(1)	---	MacFarland '97	Z.Jb. 10.
Doris bifida	32m	16♀(1,11)	---	Smallwood '05	Morph. Jahrb. 33.
Haminea solitaria (=Bulla solitaria)	---	16♀(1,11)	---	Smallwood '04	Bull. Mus. Comp. Zool. Harvard 45.
Hyalaea tridentata	24	---	---	Zarnik '11	Verh. deutsch. Zool. Gesell. 21.
Hyalocylis striata	24	12♂(1,11)	2X-0♂	Zarnik '11	Verh. Deutsch. Zool. Gesell. 21.
Limacina (Spiratella) retroversa	24s 24m	12♂(1,11)	---	Sidney '39	B.B. 76.

OPISTHOBRANCHIA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Montagua gouldii	32m	16♀(1,11)	---	Smallwood '05	Morph. Jahrb. 33.
M. pilata	32m	16♀(1,11)	---	Smallwood '05	Morph. Jahrb. 33.
Phyleir hoe bucephala	32m	16♀(1,11)	16 in ♂ pronucleus	Boveri '90	Jena Z. 17.
Pleurophyllidia californica	20-24m	10-12♀(11)	---	MacFarland '97	Z. Jb. 10.
Tiedemannia neopolitana	28	---	---	Zarnik '11	Verh. Deut. Zool. Ges. 21.

PULMONATA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Basommatophora					
Amphibolidae					
Melampus boholensis	16s	8♂(1)	---	Koslowsky '33	Jena.Z.Naturw.68.
Salinator takii	---	18♂(1)	---	Inaba '50	Jap. J.G. 25.
Lymnaeidae					
Lymnaea (Radix) auricularia	---	16♀(1)	---	Laramberdue '29	C.R.A.S. 2, XII.
"	---	17♂(1)	---	Perrot et Perrot '38	C.R. Sean. Soc. Phy.Hist. Nat. 55.
L. elodes	---	16♀(1,11)	---	Linville '00	Bull. Mus. Comp. Zool.Harvard 35.
"	---	16♂(1)	---	Perrot '38	R. Suisse Z. 45.
L.(R.)japonica	36s	18♂(1)	---	Inaba '50	Jap. J.G. 25.
L.(R.)ovata	---	17♂(1)	---	Perrot & Perrot'38	C.R. Sean. Soc. Phy. Hist. Nat. 55.
L. (Stagnicola) palustris	---	18♂(1)	---	Perrot & Perrot'38	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
L. (Stagnicola) palustris	---	16♀(1)	---	Larambergue '29	C.R.A.S. 2,XII
L.(R.) peregra	---	17♂(1)	---	Perrot & Perrot'38	C.R.Sean. Soc. Phy. Hist. Nat. 55.
L.(L.) stagnalis rhodami	---	18♂(1) 18♀(1)	---	Perrot '30,'34	R.Suisse Z 37,41
L. stagnalis	---	16♀(1)	---	Larambergue '29	C.R.A.S. 2,XII.
L. st. appressa	---	10♀(11)	---	Crabb '27	B.B. 53.
Physidae					
Physa gyrina	---	6♂(1)	---	Mahoney '40	Univ. Colo. Stud. Gen. A, 26.
Stylommatophora					
Arionidae					
Arion empiricorum	---	16-20♀(1)	---	Platner '86	A.M.A. 27.
"	---	16-20♀(1)	---	Garnault '89	Z.A. 12.
"	32m	16♀(1)	---	Lams '10	Acad.Roy.Belg. Cl.Sc. Mem. Ser.2,2.
"	---	16♂(1)	---	Perrot '38	R.Suisse Z.45.
Bradybaenidae					
Bradybaena (=Fruticicola, Ezohelix) gainesi	58s	29♂(1,11)	---	Kawabe '47	La Kromosomo 3-4.
B. similaris	58s	29♂(1)	From correction of 1950.	Inaba '50	Jap. J.G. 25.
Euhadra amaliae	---	28♂(1)	---	Inaba '45	Jap. J. Malac. 14.
E. awaensis	58s	---	---	Inaba '50	Jap. J.G. 25.
E. eoa gulicki	56s	28♂(1)	---	Inaba '50	Jap. J.G. 25.
E. hickonis	---	28♂(1)	---	Inaba '45	Jap. J. Malac. 14.
E. idzumonis	---	29♂(1)	---	Inaba '45	Jap. J. Malac. 14.

Species	Chromosome Number 2n	n	Remarks	Observer	References
E. sandai communis	---	28♂(1)	---	Inaba '50	Jap. J.G. 25.
Fruticicola(Acusta) sieboldiana	58s	29♂(1,11)	---	Inaba '50	Jap. J.G. 25.
F.(=Eulota) fruticum	---	29♂(1,11)	---	Perrot '38,P. & Perrot '38	R.Suisse Z.45; C.R.Sean.Soc. Phy.Hist.Nat. 55.
Camaenidae					
Satsuma myomphala	---	29♂(1)	---	Inaba '50	Jap. J.G. 25.
Helicidae					
Cepaea (=Tachea, Helix) hortensis	48s	24♂(1,11)	---	Kleinert '09	Jena Z.38.
"	44s	22♂(1)	---	Baltzer '13	A. Zf. 11.
"	---	22♂(1)	---	Perrot '38,P. & Perrot '38	R.Suisse Z. 45; C.R.Seam. Soc. Phy. Hist. Nat. 55.
C. (=Tachea) austriaca	---	25♂(1)	---	Baltzer '13	A. Zf. 11.
C. (=Tachea, Helix) nemoralis	48s	24♂(1)	---	Boveri '90	Jena Z. 24.
"	Ca48s	24♂(1,11)	---	Kleinert '09	Jena Z. 38.
"	---	22♂(1) 28-29♂(1)	---	Baltzer '13	A. Zf. 11.
"	---	22♂(1)	---	Perrot'38,P. & Perrot'38	R.Suisse Z. 45; C.R.Sean. Soc. Phy.Hist.Nat.55.
C. sylvatica	---	25♂(1)	---	"	"
C. vindobonensis	---	25♂(1)	---	"	"
Cochlichella acuta	---	23♂(1)	---	"	"
Helicigona (=Arianta) arbustorum	---	30♂(1)	---	"	"
"	Ca48s	24♂(1,11)	---	Soos '10	Ann.Mus. Nat. Hungarici 8.
"	Ca48s	24♂(1,11)	---	Buresch '11	A. Zf. 12.

Species	Chromosome Number 2n	n	Remarks	Observer	References
H. (Helicigona) lapicida	---	29♂(1)	---	Perrot '38,P. & Perrot'38	R.Suisse Z.45; C.R.Sean. Soc. Phy. Hist. Nat. 55.
Hellicella obvia	---	26♂(1)	---	Perrot'38	R.Suisse Z.45.
Helix (Cryptomphalus) aspersa	---	16-20♀(1)	---	Garnault'89	Z.A. 12.
"	54s	27♂(1)	---	Perrot & Perrot'37,'38	R.Suisse Z.44; C.R.A.S. 207
H.(Cantareus) aperta	54s	27♂(1)	---	Perrot & Perrot'37,'38	R.Suisse Z.44; C.R.A.S. 207
H.(Helicogena) cincta	---	27♂(1)	---	Perrot & Perrot'37,'38	R.Suisse Z.44; C.R.A.S. 207
H.(H.) melanostoma	---	27♂(1)	---	Perrot & Perrot'37,'38	R.Suisse Z.44; C.R.A.S. 207
H.(H.) pomatia	54s	27(1) 27(1)	--- ---	Perrot'27, P. & Perrot'37,'38	Z.Zf.27; R.Suisse Z.44,45;C.R.A.S. 207.
H. pomatia bivalens	48s	24♂(1,11)	---	Bolles-Lee'96, '97,'99,'11	L.C. 11,13,16,27.
"	48s	24♂(1,11)	---	Murray '98	Z. Jb. 11.
"	48s	24♂(1,11)	---	Ancel '02	Bibl.Anat. 11.
"	30+m	24♂(1,11)	---	Tschassownikow '05	Anat. Hf. 29.
"	48s	24♂(1,11)	---	Kleinert '09	Jena Z. 38.
"	48s	24♂(1) 23,24♂(11)	X-0♂	Demoll '11,'12 '12	Z.A. 38; Z.Jb. Suppl.15-2;33.
H. pomatia univalens	---	24♂(11)	12 in ♂ pronucleus	Platner'85,'89	A.M.A. 26,33.
"	24s	---	---	Zimmerman '91	Verh.Anat. Ges. 5.
"	24s	12♂(1,11)	---	Vom Rath '92	A.M.A. 40.
"	24s	---	---	Goldewski '97	Bull.Acad.Sc. Cracovie 1897.
"	24s	12♂(1,11)	---	Prowazek'02	Arb.Zoöl, Inst. Wien 13.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Helix sp.	16?s	---	---	Meek '13	Phil. Trans. Roy. Soc. London B. 203
Hygromia cinctella	---	21♂(1)	---	Perrot & Perrot'38, Perrot'38	C.R.Sean. Soc. Phy. Hist. Nat. 55; R.Suisse Z.45.
Iberus (=Massylea) soluta	---	25♂(1)	---	Perrot & Perrot'38, Perrot'38	C.R.Sean. Soc. Phy. Hist. Nat. 55; R.Suisse Z.45.
Monacha (=Theba) cathusiana	---	23♂(1)	---	Perrot & Perrot'38 Perrot'38	C.R.Sean. Soc. Phy. Hist. Nat. 55; R.Suisse Z.45.
M. incarnata	---	24♂(1)	---	Perrot & Perrot'38 Perrot'38	C.R.Sean. Soc. Phy. Hist. Nat. 55; R.Suisse Z.45.
Otala (=Dupotetia, Archelix) dupotetiana	---	26♂(1)	---	Perrot & Perrot'38 Perrot'38	C.R.Sean. Soc. Phy. Hist. Nat. 55; R.Suisse Z.45.
O. (=Otala, Archelix) hieroglyphicula	---	26♂(1)	---	Perrot & Perrot'38 Perrot'38	C.R.Sean. Soc. Phy. Hist. Nat. 55; R.Suisse Z.45.
O. (=O., A.) punctata	---	26♂(1)	---	Perrot & Perrot'38 Perrot'38	C.R.Sean. Soc. Phy. Hist. Nat. 55; R.Suisse Z.45.
Pseudotachea coquandi	---	22♂(1)	---	Perrot & Perrot'38 Perrot'38	C.R.Sean. Soc. Phy. Hist. Nat. 55; R.Suisse Z.45.
P. litturata	---	22♂(1)	---	Perrot & Perrot'38 Perrot'38	C.R.Sean. Soc. Phy. Hist. Nat. 55; R.Suisse Z.45.
Limacidae					
Lehmannia marginata	---	24♂(1)	X-0♂	Perrot '30, '38	R.Suisse Z.37,45.
Limax agrestis	---	16♂(1)	8 in ♂ pronucleus	Platner '89	A.M.A. 33.
Limax (Agrolimax) agrestis	---	30♂(1)	X-0♂	Perrot '30	R.Suisse Z. 37.
L. cinereo-niger	16s	8♂(1)	---	V. Rath '92	A.M.A. 40.
"	---	31♂(1)	X-0♂	Perrot '38	R.Suisse Z . 45.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Lymax maximus	---	Ca16♂(1)	—	Linville '00	Bull.Mus.Comp.Zool. Harvard 35.
"	---	Ca20♀(1)	—	Washburn '94	A. N. 28.
"	---	31♂(1)	X-0♂	Perrot '30, '38	R.Suisse Z.37, 45.
L. tenellus	—	24♂(1)	X-0♂	Perrot '30, '38	R.Suisse Z.37, 45.
Philomycidae					
Incillaria fruhstorferi	48s	24♂(1)	—	Inaba '50	Jap. J.G. 25.
Polygyridae					
Mesodon thyroidus	58s	29♂(1)	—	Husted & Burch '46	A.N. 80.
M. mitschelleanus	"	"	—	"	"
M. andrewsae normalis	"	"	—	"	"
M. zaletus	"	"	—	"	"
M. appressus	"	"	—	"	"
M. rugeli	"	"	—	"	"
M. inflectus	"	"	—	"	"
Polygra appressa	60-62s	31♂(1) 31♀(1)	—	Pennypacker '30	J.M. 49.
Stenotrema hirsutum	58s	29♂(1)	—	Husted & Burch '46	A.N. 80.
S. monodon aliciae	"	"	—	"	"
S. spinosum	"	"	—	"	"
S. stenotrema	"	"	—	"	"
Triodopsis dentifera	"	"	—	"	"
T. albolabris	"	"	—	"	"
T. fraudulenta	58s 59 60 62 61-62	29♂(1) 29-30 30 31	Presence of heteromorphic bivalents in different strains	"	"

PULMONATA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
T. f. vulgata	58s	29♂(1)	3 strains	"	"
T. tridentata	"	"	---	"	"
T. t. juxtidens	"	"	3 strains	"	"
T. t. edentilabris	"	"	2 strains	"	"
Succineidae					
Succinea horticola	34s	17♂(1)	---	Inaba '45	Jap. J. Malac. 14.
S. ovalis	40s	20♂(1,11)	---	Hickman '31	J.M. 51.
"	---	20♂(1)	---	Perrot '38, P. & Perrot '38	R.Suisse Z.45; C.R.Sean. Soc. Phy. Hist. Nat. 55.
S. putris	---	22♂(1)	---	"	"

CEPHALOPODA
DIBRANCHIA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Sepia officinalis	---	6♀(1)	---	Loyez '06	Arch. Anat. Micr. 8.

NEMATHELMINTHES
ACANTHOCEPHALA
ECHINORHYNCHOIDEA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Echinorhynchidae					
Echinorhyncus acus	---	8♀(1,11)	---	Hamann '91	Jena Z. 18.
E. gigas	8m	4♂(1,11)	---	Kaiser '93	Bib. Zoöl. 7.
E. haeruca	---	8♀(1,11)	---	Hamann '91	Jena Z. 18.
E. polymorphus	---	8♀(1,11)	---	Hamann '91	Jena Z. 18.
E. proteus	8m	4♀(11)	---	Von Voss '10	A. Zf. 5.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Gigantorhynchidae					
Gigantorhyncus gigas	6s	3♂(1)	---	Noe '14	Arch. Ital. Biol. 53.
G. naceus	6s	3♂(1,11)	---	Noe '14	Mem. R. Acc. Lincei Ser. V, 10.

NEMATODA

Species	Chromosome Number 2n	n	Remarks	Observer	References
HOLOGONIA Trichinellidae					
Trichosomoides crassicauda	8o 7-8m	4♂(1) 3,4♂(11) 4♀(1,11)	X-0♂	Walton '24	Z.Z.M.A. 1.
THELOGONIA Acuariidae					
Acuaria spiralis	11-12m	6♂(1,11) 6♀(1,11)	X-0♂	Waltón '24	Z.Z.M.A. 1
Ancyracanthidae					
Ancyracanthus cystidicola	11s 12o 11,12m	6♂(1) 5,6♂(11) 6♀(1,11)	X-0♂	Mulsow '11,'12	Z.A. 38; A.Zf. 9.
Ascaridae					
Angiostomum nigrovenosum (=Ascaris nigrovenosum)	---	6♀(1,11)	Hermaphrodite. Occasionally 5 in n.	McDowall '06,'08	Proc. Camb. Phil. Soc. 13, 14
Ascaris canis (Ascaris of dog)	---	4♀(1,11)	4 in ♂ pronucleus	Carnoy '86	L.C. 3.
"	---	18♂(1) 12,18♂(11)	---	Jeffrey & Haertl '38	L.C. 47.
" (Ascaris D. Hundes)	---	16♀(1) 8♀(11)	$X_1 \ldots X_8$-0♂	Lukjanow '89	A.M.A. 34.

Species	Chromosome Number 2n	n	Remarks	Observer	References
" (=Ascaris mystax)	22s 22o 22m	11♂(1,11) 11♀(1,11)	Chrom. diminution in soma	Marcus '05,'06	Sitz. Ber. Ges, Morph. Phys. München 21; A.M.A. 68.
"	30s 36o 30,36m	18♂(1) 12,18♂(11) 18♀(1,11)	$X_1 \ldots X_6$-0♂ Fragmentation of chrom into 60 in ♂, or 72 in ♀.	Walton'16 a,b, '18	J. Parasit. 3; B.B. 31; J.M. 30.
A. clavata	---	24♀(1,11)	---	Carnoy'86	L.C. 3.
A. felis	---	9♂(1,11)	X-Y♂	Edwards'12	A.Zf. 7.
"	---	9♂(1,11)	X-Y♂	Walton '16	B.B. 31.
"	---	9♂(1,11)	X-0♂	Walton '21	J.E.Z. 34.
" (Goeze)	---	9♂(1,11)	X-0♂	Walton '21	J.E.Z. 34.
A. incurva	35s 42o	21♂(1) 14,21♂(11) 21♀(1,11)	$X_1 \ldots X_8$-0♂ Chromatin diminution in cleavage	Goodrich '14,'16	B.B. 27; J.E.Z. 21.
A. lumbricoides	---	20-24♀(1) 24♀(11)	---	Carnoy '86	L.C. 3.
"	---	24♀(1) 24♀(11)	---	Boveri '87	Sitz.Ber. Ges. Morph. Phys. München. 2; Jena Z. 14.
"	48-50m	24 24	Chromatin diminution in cleavage	Bonnevie '02	Jena Z. 29.
"	43s	24♂(1) 19,24♂(11) 24♀(1,11)	$X_1 \ldots X_5$-0♂	Edwards'10a,b.	Sci. 31;A.Zf. 5.
"	---	24♂(1) 19,24♂(11)	---	Jeffrey & Haertl '38	L.C. 47.
"	43s 48o 43,48m	24♂(1) 19,24♂(11) 24♀(1,11)	$X_1 \ldots X_5$-0♂	Walton '24	Z.Z.M.A. 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ascaris mystax (=A. canis)	22s 22o 22m	11♂(1,11) 11♀(1,11)	Chrom. diminution in soma.	Marcus '05,'06	Sitz. Ber. Ges. Morph. Phys. München 21; A.M.A. 68.
A. megalocephala	5s	2♂(1) 2,3♂(11) 5♀(1)	Hermaphrodite. X fused with one of autosomes in Ist div.	Gonlliart '32	C.R.S.B. 110
"	4m	---	---	Hance '27	J.M. 44.
A. megalocephala bivalens	4s 4o,4m	2♂(1,11) 2♀(1,11)	---	Van Beneden '83, '88	A.B. 4; A.A. 3.
"	4s 4o 4m	2♂(1,11) 2♀(1,11)	2 in ♂ and ♀ pronucleus	Van Beneden & Julin '84	Bull. Acad. Roy. Sc. Belg. Ser. III. 7.
A. megalocephala bivalens	4s 4o 4m	2♂(1,11) 2♀(1,11)	2 in ♂ and ♀ pronucleus	Van Beneden & Neyt '87	Bull. Acad. Roy. Sc. Belg. Ser. III. 14.
"	5s 5m	---	X-0♂?	Boring '09	A.Zf. 4.
"	4m	2♀(1,11)	X-0♂? X probably fused with one autosome. Diminution and fragmentation of chrom. in soma. 2 in ♂ and ♀ pronucleus.	Boveri '87 a,b,c, '88, '04,'09 a,b, '10	Sitz. Ber. Ges. Morph. Phys. München 3; A.A. 2; Jena Z. 14; 15: "Ergeb. Konstitution d. Chrom. Substanz d. Zell-Kerns" Jena; A. Zf. 3,4: Fest. R. Hertwig, 3.
"	4m	2♂(1,11)	---	Brauer '93	A.M.A. 42.
"	4m	4♀(1) 2♀(11)	2 in ♂ and ♀ pronucleus	Carnoy'86a,b	L.C. 2,3.
"	4m	4♀(1) 2♀(11)	2 in ♂ and ♀ pronucleus	Carnoy & Lebrun '97	L.C. 13.
"	4m	---	2 in ♂ and ♀ pronucleus	Dostoiewsky '88	A.A. 3.

Species	Chromosome Number 2n	n	Remarks	Observer	References
A. megalocephala bivalens	5s	3♂(1) 2,3♂(11)	X-0♂	Edwards '10a,b	Sci. 31: A.Zf. 5.
"	4s 4o 4m	2♂(1,11) 2♀(1,11)	—	Fauré, Fremist '13	A.A.M. 15.
"	4m	—	—	Fogg '30	J.M. 50.
"	4m	—	2m in abnormal case. Fragmentation of chrom.	Zoja '96	A.M.A. 47.
"	5m(?) 4-6m(?)	2,3♀(1,11)	X-0♂. X fused with one autosome. 2,3 in ♂ pronucleus.	Frolowa '12	A.Zf. 9.
"	—	4♀(1) 2♀(11)	2 in ♂ pronucleus	Van Gehuchten '87	A.A. 2.
"	2-7m	3-4♀(1) 2-4♀(11)	49-54 in ♂ embryo, 58-62 in ♀ embryo.	Geinitz '15	A.Zf. 13.
"	4s 4o	2♂(1,11) 2♀(1,11)	—	Hertwig '90	A.M.A. 36.
"	1-8m	—	1-2 in ♂ pronucleus. 27(♂) and 36(♀) embryos.	Kautzsch '12	A.Entwick. 35.
"	4m	4♀(1) 2♀(11)	2 in ♂ pronucleus	Kultschitzky '88a,b	Sitz. Akad. Wiss. Berlin. 88; A.M.A. 31.
Ascaris megalocephala bivalens	4o	2♀(11)	—	Meek '13	Phil. Trans. Roy. Soc. London. 203 B.
"	4m	2♀(1,11)	2 in ♂ and ♀ pronucleus	Montgomery '04, '08	B.B. 6; A.Zf. 2.
"	—	2♀(1,11)	—	Moszkowski '02	A.M.A. 59.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ascaris megalocephala bivalens	4m	---	---	Nawaschin '36	B. Zhurn. (Moscow)5.
"	4 4m	4♂(1) 4♀(1,11)	Fragmentation and diminution of chrom.in cleavage.	Nussbaum '84,'02	A.M.A. 23, 59.
"	4m 8-12m	---	Chrom. number varies due to fragmentation of chrom.	Vom Rath '94	B.Zbl. 14.
"	4m	2♀(1,11)	2 in ♂ pronucleus	Retzius '11	Biol. Unters. 16.
"	4o	2♀(1,11)	---	Sabaschnikoff '97	Bull. Soc. Imp. Nat. Moscow 9.
"	---	2♀(1)	---	De Saedeleer '13	L.C. 28.
"	---	2♀(1)	---	Schneider '83	"Ei u. Befruchtung." Breslau.
"	4m	2♂(1) 2♀(1)	---	Tretjakoff '05	A.M.A. 65.
"	4m	---	2 in ♂ and ♀ pronucleus	Vejdovsky '12	Konig. Böhm, Gesel. Wissen. Prag.
"	4 96-104m	2♂(1,11)	$X_1 \ldots X_8$-0♂	Walton '24	Z.Z.M.A. 1.
"	4	---	---	Von Wasielewski '93	A.M.A. 41
"	4m	2♀(1) 2♀(11)	---	Zacharias '87a, b,'12 a,b	A.A. 2; A.M.A. 30; A.A. 42; Z.A. 40.
"	4m	---	---	Makino '49	La Kromosomo 5-6.
Ascaris megalocephala trivalens	3m	---	X-0?♂. 1 in ♂ pronucleus, 2 in ♀ pronucleus.	Zacharias '12	B.Zbl. 32.
Ascaris megalocephala univalens	2o	1♀(1)	---	Blanckertz'10	A.Zf. 6.
"	---	1♀(1)	---	Bonnevie'08	A.Zf. 2.
"	3m	---	X-0♂(?)	Boring '09	A.Zf. 4.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ascaris megalocephala univalens	2m	1♀(1,11)	1 in ♂ pronucleus. Fragmentation and diminution of chrom.	Boveri '87, '88, '92, '99, '04, '09	Jena. Z. 14, 15; Sitz. Ges. Morph. Phys. München. 8; Fest. von Kupffer. P. 383; "Ergeb. Konst. d. Chr. Subst. d. Zellkerns.; A. Zf. 3.
"	2s	1♂(1,11)	---	Brauer '93	A.M.A. 42.
"	2m	---	1 in ♂ and ♀ pronucleus.	Carnoy & Labrun '97	L.C. 13.
"	2m	---	1 in ♂ and ♀ pronucleus.	Dostoiewsky '88	A.A. 3.
"	3m	---	X-O♂	Edward '10	A.Zf. 5.
"	2s 2o	1♀(1)	---	Faure Fremit '13	A.A.M. 15.
"	2m	---	---	Fogg '30	J. M. 50.
"	2m	---	1 in ♂ and ♀ pronucleus.	Held '12	Verh. Anat. Ges. 26.
"	2m	4♀(1) 2♀(11)	1 in ♂ and ♀ pronucleus.	Herla '95	A.B. 13.
"	2s 2o	1♂(1,11)	---	Hertwig '90	A.M.A. 36.
"	2m	---	---	King & Beams '38	J.E.Z. 77.
"	2m	---	---	Kultschitzky '88	A.M.A. 31.
"	2m	---	---	Nawaschin '36	B. Zhurn. 5.
"	2 2m	---	Fragmentation and diminution of chrom.	Nussbaum '02	A.M.A. 59.
"	2o	1♂(1) 1♀(1)	---	Retzius '14	Bid. Unters. 17.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ascaris megalocephala univalens	2s 2o 2m	1♂(1,11) 1♀(1,11)	---	Schneider '91	Arb. Zool. Inst. Wien. 9.
"	2s	1♂(1,11)	---	Tretjakoff '05	A.M.A. 65.
"	22	---	---	Walton '16	J. Parasit. 3.
"	2	1♂(1,11)	$X_1..X_8$ or X_9-0♂. 52-60 in soma, due to fragmentation of chrom.	Walton '24	Z.Z.M.A. 1.
"	2	---	---	Von Wasielewski '93	A.M.A. 41.
"	---	---	1 in ♂ and ♀ pronucleus	Zacharias '12	A.A. 42.
"	2m	---	---	Makino '49	La Kromosomo 5-6.
A. nigrovenosa (=Angiostomum nigrovenosnm)	---	6♀(1,11)	Hermaphrodite	McDowall '06, '08	Proc. Camb. Phil. Soc. 13, 14.
Belascaris mystax	18s 18-20o 18m	9♂(1,11) 9♀(1,11)	X-0♂	Walton '24	Z.Z.M.A. 1.
Belascaris trioquetra	22s 24o 44-48m	12♂(1) 10,12♂(11) 12♀(1,11)	X_1X_2-0♂	Walton '24	Z.Z.M.A. 1.
Contracaecum spiculigerum	15s 16o 15-16m	8♂(1) 7,8♂(11) 8♀(1,11)	X-0♂	Walton '24	Z.Z.M.A. 1.
Coronilla Scillicolla (robusta)	8m	8♀(1) 4♀(11)	4 in ♂ pronucleus	Carnoy '86	L.C. 3.
Toxascaris canis	30s 36o 60-72m	18♂(1) 12,18♂(11) 18♀(1,11)	$X_1...X_6$-0♂	Walton '24	Z.Z.M.A.
Chromadoridae					
Spirina parasitifera	14s	14♂(1) 7♂(11)	---	Cobb '25,'28	J.H. 16; Jour. Washington Acad. Sci. 18.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Cruziidae					
Cruzia tentaculata	12s 12o 22-24m	6♂(1) 5,6♂(11) 6♀(1,11)	X-0♂	Walton '24	Z.Z.M.A. 1.
Cucullanidae					
Cucullanus elegans	12m	---	---	Martini '03	Z.W.Z. 74.
Filariidae					
Filaria papillosa	11,12m	6♀(1,11)	---	Meves '15	A.M.A. 87.
Filaroides mustelarum	16m	8♀(1) 4♀(11)	4 in ♂ pronucleus	Carnoy '86	L.C. 3.
Heterakidae					
Ganguleterakis spumosa	10s 12o 20-24m	6♂(1) 4,6♂(11) 6♀(1,11)	X_1X_2-0♂	Walton '24	Z.Z.M.A. 1.
Heterakis dispar	9s 10o	5♂(1) 4,5♂(11) 5♀(1,11)	X-0♂	Gulick '11	A.Zf. 6.
H. inflexa	---	5♂(1) 4,6♂(11) 5♀(1)	X-0♂	Gulick '11	A.Zf. 6.
H. Papillosa	9s 10o 18-20m	5♂(1) 4,5♂(11) 5♀(1,11)	X-0♂	Walton '24	Z.Z.M.A. 1.
Heterakis sp.	9s	5♂(1) 4,5♂(11) 5♀(1,11)	X-0♂	Boveri '09	A.Zf. 4.
H. vesicularis	9s 10o	5♂(1) 4,5♂(11) 5♀(1,11)	X-0♂	Gulick '11	A.Zf. 6.
Oxyuridae					
Oxyuris ambigua	3-4(?)s	1-3♀(1,11)	---	Löwenthal '89, '90	Inter. Monats. Anat. Phis. 6,7.
Syphacia obvelata	15-16s 15-16o 15-16m	8♂(1) 7,8♂(11) 8♀(1)	X-0♂	Walton '24	Z.Z.M.A. 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Physalopteridae					
Physaleptera Turgida	9(?)s 10o 18-2m	5♂(1) 4,5♂(11) 5♀(1,11)	X-0♂	Walton '24	Z.Z.M.A. 1.
Rhabdiasidae					
Rhabdias fülleborni	12o 11,22m 12,22m	7♂(1) 5,6♂(11)	X_1X_2-0. Hermaphrodite	Dreyfus '37	Bio. Gen. Sao Paulo. 1.
"	11s 12o 11,22m	6♂(1) 5,6♂(11)	X-0♂. Dioecious	Dreyfus '37	"
Rhabditis aberrans	24o	24♀(1,11)	Parth.	Belar '23	B.Zbl. 43.
"	18m	10♂(1) 10♂(11) 18♀(1)	X-Y♂?	Kruger '12, '13	Z.A. 40; Z.W.Z. 105.
R. aspera	13s 14o 13-14m	7♂(1) 6,7♂(11) 7♀(1,11)	X-0♂	Krönirg '23	A.Zf. 17.
R. dolichura	---	6♂(1,11) 6♀(1,11)	---	Honda '25	J.M. 40.
R. elegans	---	6♂(1,11) 6♀(1,11)	---	Honda '25	J.M. 40.
R. gurneyi	10o, 10m	5♀(1,11)	---	Belar '23	B. Zbl. 43.
R. monohystera	20o 20m	10♀(1)	---	Belar '23,'24	B. Zbl. 43; Z.Z.M.A. 1.
"	---	10♀(1)	Parthenogenesis	Nigon '47	B.B. Fr. Belg. 81.
R. nigrovenosa	11,12(?)m	6♂(1) 5,6♂(11) 6♀(1,11)	X-0♂. Dioecious	Boveri '11	Verh. Phys. med. Ges. Wurzburg. 41.
"	12o 12m	7♂(1,11) 6♀(1,11)	X_1X_2-0. Hermaphrodite	Boveri '11	"
Rhabditis pellio	14o	7♀(1,11)	---	Hertwig '20	A.M.A. 94.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Rhabditis pellio	14m	14♀(1,11)	Mutant	Hertwig '20	A.M.A. 94.
" (Bütschli)	13s 14o 13,14m	7♂(1) 6,7♂(11) 7♀(1,11)	X-0♂	Kröning '23	A.Zf. 17.
" (Schneider)	13s 14o 13,14m	7♂(1) 6,7♂(11) 7♀(1,11)	X-0♂	Kröning '23	A.Zf. 17.
Rhabditis sp.	13s 14o 13,14m	7♂(1) 6,7♂(11) 7♀(1,11)	X-0♂	Kröning '23	A.Zf. 17.
Rhabdonema nigrovenosa	11,22(?)m 12,24(?)m	---	Dioecious	Schleip '11a,b	Ber. Nat. Ges. Freiburg. 19; A.Zf. 7.
"	12o	7♂(1) 7♂(11) 6♀(1,11)	Hermaphrodite	"	"
Seuratidae					
Ophiostomum mucronatum	12m	6♀(1,11)	Ca4 in ♂ pronucleus	Carnoy '86	L.C. 3.
Spiruridae					
Protospirura muris	9s 10o 9-10m	5♂(1) 4,5♂(11) 5♀(1,11)	X-0♂	Walton '24	Z.Z.M.A. 1.
Spiroptera strumosa	12m	8♀(1) 4♀(11)	4 in ♂ pronucleus	Carnoy '86	L.C. 3.
Strongylidae					
Sclerostomum (=Strongylus) edentatum	11s 12o	6♂(1) 5,6♂(11) 6♀(1,11)	X-0♂	Kühtz '13	A.M.A. 83.
Sc. equinum	11s 12o	6♂(1) 5,6♂(11) 6♀(1,11)	X-0♂	"	"
Sc. vulgare	11s 12o	6♂(1) 5,6♂(11) 6♀(1,11)	X-0♂	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Strongylus filaria	11s	6♂(1) 5,6♂(11) 6♀(1)	X-0♂	Kröning '23	A.Zf. 17.
"	12s 12o 12m	6♂(1,11) 6♀(1)	---	Struckmann '06	Z.Jb. 22.
St. micrurus	---	6♂(1) 5,6♂(11)	X-0♂	Kröning '23	A. Zf. 17.
St. paradoxus	11s 12o 11,12m	6♂(1) 5,6♂(11)	X-0♂	"	"
"	---	6♀(1)	---	Struckmann '06	Z.Jb. 22.
"	11s 12o 11,12m	6♂(1) 5,6♂(11) 6♀(1,11)	X-0♂	Gulick '11	A.Zf. 6.
St. tenuis	---	5,6♂(1,11)	X-0♂	"	"
St. tetracanthus	---	6♀(1)	---	Meyer '95	Jena. Z. 22.
Trichostrongylidae					
Nematospira turgida	11s 12o 22-24m	6♂(1) 5,6♂(11) 6♀(1,11)	X-0♂	Walton '24	Z.Z.M.A. 1.

NEMATOMORPHA
GORDIOIDEA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Chordodidae					
Paragordius varius	14m	7♀(1,11)	7 in ♂ pronucleus	Montgomery '04	Proc. Acad. Nat. Sc. Phila. 56.
Gordiidae					
Gordius affinis	4o	1♀(1)	---	Svábenik '09	Sitz. Kon. Böhm. Ges. Wiss. Prague. Art. 7.
G. aquaticus	7-9m	---	---	Meyer '13	Z.W.Z. 105.

Species	Chromosomes Number 2n	n	Remarks	Observer	References
G. aquaticus	4m	---	---	Muhldorf '13, '14	Z.A. 42; Z.W.Z. 111.
G. graittanopolensis	---	8♀(1)	---	Carmerano '90	Mem. R. Acad. Sc. Torino. Ser. II. 40.
G. montenigrinus	4o	1♀(1)	---	Svábenik '09	Sitz. Kon. Böhm. Ges. Wiss. Prague. Art. 7.
G. preslii	4o	1♀(1)	---	"	"
"	4s	---	---	Vejdovsky '94, '12	Z.W.Z. 57; Kon. Böhm, Gesel. Wissen. Prague.
G. tolosanus	---	8♀(1)	---	Camerano '90	Mem. R.Acad. Sc. Torino. Ser. II. 40.
"	4o	1♀(1)	---	Svábenik '09	Sitz. Kon. Böhm. Ges. Wiss. Prague. Art. 7.
"	4s 4o	2♀(1)	---	Vejdovsky '12	Kon. Böhm. Ges. Wiss. Prague.
G. villoti	---	8♀(1)	---	Camerano '90	Mem. R. Acad. Sc. Torino. Ser. II. 40.

MOLLUSCOIDEA
BRACHIOPODA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Lingula anatina	---	---	8 in ♂ and ♀ pronucleus	Yatsu '02	J. Coll. Sc. I. U. Tokyo 17.

BRYOZOA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Membranipora pilosa	---	11♀(1)	---	Bonnevie '06, '07	Arch. Math. Nat. 27; Jena Z. 35.

BRYOZOA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Plumatella fungosa	5m	6-7♂(1)	---	Braem '97	Zoologica 10.

KAMPTOZOA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pedicellina americana	22s 22o 22m	11♂(1,11) 11♀(1,11)	---	Dublin '05	Ann. N.Y. Acad. Sc. 16.
P. echinata	---	8♀(1)	---	Lebedinsky '05	B. Zbl. 25.

PHORONIDA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Phoronis australis	---	12♂(1) 12♀(1)	---	Ikeda '03	Ann. Zool. Jap. 4.
P. ijimai	---	6♂(1) 6♀(1)	3 in ♂ and ♀ pronucleus	Ikeda '01,'03	J. Coll. Sc. I.U. Tokyo 13; Ann. Zool. Jap. 4.

ECHINODERMATA
ASTEROIDEA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Asterias amurensis	30s	15♂(1)	Sex-chrom. unknown	Niiyama & Makino '47	J.F.S. Hokkaido U. Ser. VI. 9
Asterias forbesii	36m	18♂(1,11)	---	Jordan '07,'08	A.A. 31; Carnegie Inst. Pub. 102.
" (A.vulgaris?)	36m Cal8m (Parth.)	---	---	Tennent '07	B.B. 13.
"	18?m (Parth)	18♀(11)	---	Tennent & Hogue '06	J.E.Z. 3.
"	---	17?♂(1,11)	---	Wilson & Mathews '95	J.M. 10.

Species	Chromosome Number 2n	n	Remarks	Observer	References
A. glacialis	36m (Parth.)	18♀(1,11)	---	Buchner '11	A.Zf. 6.
"	18m 18m (Parth.)	---	---	Delage '01	A.Z.E.G. 9.
"	---	8-9	In ♂ pronucleus	Field '95	J.M. 11.
A. vulgaris (A. forbesii?)	18s 18m 18m (Parth.)	9♂(1,11)	---	Tennent '07	B.B. 13.
Asterina pectinifera	40x	20♂(1)	Sex-chrom. unknown	Niiyama & Makino '47	J.F.S. Hokkaido U. Ser. VI, 9.
Aphelasterias japonica	48x	24♂(1)	"	"	"
Henricia nipponica	54s	27♂(1)	"	"	"
Cribrella sanguinolenta	Ca36m	---	---	Jordon '10	A.Zf. 5.

CRINOIDEA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Antedon bifida	8?o	---	---	Chubb '06	Phil. Trans. Roy. Soc. London, B. 198.

ECHINOIDEA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Arbacia punctulata	Ca40m	---	---	Jordan '12	J.E.Z. 12.
"	38m	---	19 in ♂ pronucleus	Matsui '24	Jour. Coll. Agr. Tokyo, 7.
A. pustulosa	40m	---	---	Baltzer '10	A.Zf. 5.
Chypeaster rosrceus	44m	---	X-Y?	Gardiner '27	J.M. 43.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Echinarachius parma	52m	---	26 in ♀ pronucleus	Matsui '24	Jour. Coll. Agr. Tokyo. 7.
Echinocardium mediterraneum	42m	21♀(1)	21♀(1)	Ubisch '23	A.Zf. 17.
Echinocardium x Paracentrotus	39m	---	2 or more chroms. diminish in course of development	"	"
Echinocardium x Sphaerochinus	24m	---	17 chroms. diminish in course of development.	"	"
Echinus acutus	38m	---	---	Doncaster & Gray '11,'13	Proc. Camb. Phil. Soc. 16; Q.J.M. S. 58.
E. esculentus	32m	16♀(1,11)	---	Bryce '03	Q.J.M.S. 46.
"	38m	---	---	Doncaster & Gray '11,'13	Proc. Camb. Phil. Soc. 16; Q.J.M. S. 58.
"	18m	---	---	Meek '13	Phil. Trans. Roy. Soc. London, B. 203
E. microtuberculatus bivalens	36m 18m (Parth.)	---	X-Y♂. 18 in ♂ and ♀ pronucleus.	Baltzer '09, '10 '13.	A.Zf. 2,5; Sitz Phy. Med. Ges. Wurzburg, 6.
E. microtuberculatus bivalens	---	18♀(1)	---	Boveri '90, '05	Jena Z. 17, 32.
"	30+m 16-18m (Parth.)	16-18♀(1)	Parthenogenetic eggs treated with strychnine	Hertwig '88, '95, '96	Sitz. Ges. Morph. Phys. München, 4,11; Fest. Gegenbaur, 2.
"	36m	18(1,11) 18(1,11)	---	Stevens '02	Roux 15.
E. microtuberculatus univalens	18m	9(1,11) 9(1,11)	---	Boveri '90, '05	Jena Z. 17, 32.
"	18m	---	---	Godlewski '06	Roux 20.

Species	Chromosome Number 2n	n	Remarks	Observer	References
E. microtuberculatus bivalens	20+m	---	9-12 in ♂ pronucleus	Krahelska '05	Bull. Int. Acad. Sci. Cracovie, '05
"	18m	---	---	Stevens '02	Roux 15.
E. miliaris	30-34m	---	---	Doncaster & Gray '11, '13	Proc. Camb. Phil. Soc. 16; Q.J.M.S. 58.
"	22m 8-11m	---	10-12 in ♂ pronucleus	Morgan '95	Roux 2.
E. sphaera	18m	---	---	Delage '01	A.Z.E.G. 3.
Hipponoe esculenta	---	---	16-20 in ♀ pronucleus	Jordan '08	Carnegie Inst. Pub. 102.
"	32?m	---	---	Pinney '11	B.B. 21.
"	32-34m	---	X-O or X-Y♂	Tennent '12	J.M. 23.
Moira atropos	46m	---	---	Pinney '11	B.B. 21.
Parechinus miliaris	18m (Parth.)	---	---	Retzius '10	Biol. Unters. 15.
Sphaerochinus granularis	Ca40m	---	---	Baltzer '10	A.Zf. 5.
"	18m (Parth.)	---	---	Godlewski '12	Roux 33.
"	---	16-18♀(1)	---	Hertwig '96	Fest. Gegenbaur, 2.
Strongylocentrotus intermedius	50s	25♂(1)	Sex-chrom. unknown	Niiyama & Makino '47	J.F.S. Hokkaido U. Ser. VI, 9.
Strongylocentrotus lividus	36m	---	X-Y♂. 18 in ♂ and ♀ pronucleus	Baltzer '09, '10, '13	A.Zf.2, 5; Sitz. Phy. Med. Ges. Wurzburg, 6.
"	36m	---	18 in ♂ and ♀ pronucleus	Boveri '02	Verh. Phys. med. Ges. Wurzburg. 3.
"	18m 18m (Parth.)	---	9 in ♀ pronucleus	Delage '99	A.Z.E.G. 3,5.
"	30+m 16-18m (Parth.)	16-18♀(1)	Parth. eggs treated with strychnine	Hertwig '96	Fest. Gegenbaur, 2.

ECHINOIDEA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Strongylocentrotus lividus	36m	---	---	Petrunkewitsch '04	Z. Jb. Suppl. 7.
"	36m	---	---	Schaxel '11	A.M.A. 76.
S. purpuratus	36m 18m (Parth.)	---	---	Hindle '11	Roux 31.
Toxopneustes variegatus	36m	---	X-Y?	Heffner '10	B.B. 19.
"	38?m	---	---	Pinney '11	B.B. 21.
"	14-24m	---	---	Selenka '78	"Befruchtung d. Eies von Tox. Leipzig.
"	36-38m 19m (Parth.)	---	X or X-Y♂. 18-19 in ♂ pronucleus	Tennent '12, '13	J.E.Z. 12; J.M. 23.
"	36m 18m (Parth.)	---	18 in ♂ pronucleus	Wilson '95, '01, '01	J.M. 11; Roux 12, 13.

HOLOTHUROIDEA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Stichopus regalis	28-36m	16-18♂(1)	8-9 in ♂ pronucleus	Field '93, '95	A.A. 8; J.M. 11.

OPHIUROIDEA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ophiocoma pumila	---	Cal8♀(1)	---	Jordan '08	Carnegie Inst. Pub. 102.

ARTHROPODA
CRUSTACEA
PHYLLOPODA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Apus sp.	1o	---	---	Moore '93	Q.J.M.S. 35.
Artemia salina	42o	---	---	Artom '29	Bull. Soc. Med. Chir. 43.
"	84m 168m (Parth.)	84♀(1,11)	---	Brauer '93, '94	Z.A. 11; A.M.A. 43.
"	84?o 70-90m	84♀(1)	---	Fries '09	A.Zf. 4.
"	---	21♀(1) 84♀(1) (Octoploid)	--- ---	Gross '32, '35	Naturwiss. 20; Z.Z.M.A. 23.
"	---	84♀(1)	---	Petrunkewitschi '02.	A.A. 21.
"	---	30-40♂(1)	---	Weismann & Ishikawa '88	Z. Jb. 3.
Artemia salina (var. univalens sessuata di Cagliari)	42m	21♀(1,11)	Bisexual form.	Artom '08,'11, '11,'12,'28	Biologica 1; A.Zf. 7; B. Zbl. 31; A.Zf. 9; C.R.S. B. 99.
Artemia salina (var. bivalens partheogenetica di Capo d'Istria)	84m	84♀(1)	Parthenogenetic. One polar body.	"	"
Artemia salina	42,62, 84,162	---	Geographical polyploidy. Parthenogenetic	Barigozzi '44,'46	Chrom. 2 =Arch. Jul. Klaus-Stift. Vererb. 21.
Branchipus sp.	---	10♂(1,11)	---	Moor '93	Q.J.M.S. 35.
Branchipus grubii	22-44o 24m	12♀(1)	---	Fries '09	A.Zf. 4.
"	24o 24m	12♀(1,11)	---	Brauer '92, '94	Abh. Akad. Wiss. Berlin Physik. ABt '92; A.M.A. 43.
B. vernalis	23s	12♂(1)	X-0?♂	Baker & Rosof '27,'28	Ohio Jour. Sci. 27, 28.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Chirocephalus sp.	23s 21-23m	---	---	Selipova '30	Bull. Acad. Sci. USSR, 1930.
C. nankinensis	---	12♂(1,11) 12♀(1)	---	Hsü '35	L.C. 44.

CLADOCERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Bythotrephes longimanus	4?m	---	2? in ♀ pronucleus	Weismann & Ishikawa '91	Z.Jb. 4.
Daphnia magna	20m 20s	10♀(1)	---	Mortimer '35, '36	Naturwiss. 23; Z.Jb. 56.
D. pulex	24m (Parth.)	12♀(1)	---	"	"
"	24m (Parth.)	---	---	Banghaut '21	Jahrb. Dissert. Phil. Fakul. Berlin '21.
"	8o 8m	8♀(1)	---	Kühn '08	A.Zf. 1.
"	8o 8m 9s	4,5♂(11)	---	Rey '34	Bull. Soc. Zool. France, 59.
"	8-10s 8-10m	4-5♂(1,11)	---	Taylor '15	Z.A. 45.
"	24o 24m	24♀(1)	---	Schrader '26	Z.I.A.V. 40.
Moina macrocopa	22o	11♀(1)	---	Allen & Banta '28,'29	Sci. 67; J.M. 48.
Moina paradoxa	---	4♀(1,11)	---	Weismann & Ishikawa '89	Z.Jb. 4.
M. rectirostria	---	4♀(1,11)	---	Weismann & Ishikawa '89	Z.Jb. 4.
"	30s, ♀m	15♂, ♀(1,11)	Parth.	Dehn Von '48	Chrom. 3.

CLADOCERA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Polyhemus pediculus	8s 8m	8♀(1)	---	Kühn '08	A.Zf. 1.
Simocephalus vetulus	---	8♂(1,11)	---	Chambers '13	B.B. 25.

OSTRACODA

Species	Chromosome Numbers 2n	n	Remarks	Observer	References
Cyprinotus incongruens	---	10♀(1) 5♂(1) 5,10♂(11)	X_1-6-Y or X_1-5-0♂	Bauer '34	Naturwiss. 22.
Cypris fuscata	24m	24♀(1)	---	Schleip '09	A.Zf. 2.
C. incongruens	12m (Parth.)	12♀(1)	---	Muller-Calé '13	Z.Jb. 36.
"	12m (Parth.)	12♀(1)	---	Woltereck '98	Z.W.Z. 64.
C. reptans	12m (Parth.)	12♀(1)	---	Woltereck '98	Z. W. Z. 64.
Heterocypris incongruens	20o 15s 20m	10♀(1,11) 5♂(1) 5,10♂(11)	X_1-6-Y or X_1-5-0♂	Bauer '40	Chrom. 1.
Notodromas monacha	16m	8♂(1,11)	---	Schmalz '11, '12	Z.A. 37; A.Zf.8.
N. monacha =Cyprois monacha	13-16o 16m	8♀(1,11)	---	Schleip '09	A.Zf. 2.

COPEPODA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Gymnoplea (Calanoidea)					
Anomalocera patersonii	16o 32m	16♀(1,11)	---	Vom Rath '95	A.M.A. 46.
"	---	16♀(1)	---	Heberer '24	Z.W.Z. 123.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Calanus finmarchicus	34s	17♂(1)	---	Heberer '32	Z.W.Z. 142.
"	34o	17♂(1)	---	Hilton '31	Q.J.M.S. 74.
C. gracilis	---	16♀(1)	---	Kornhauser '15	A.Zf. 13.
Centropagis typicus	---	13,14♂(11)	X-0♂	Heberer '32	Z.W.Z. 142.
Diaptomus castor	34m	---	17 in ♂ and ♀ pronucleus	Amma '11	A.Zf. 6.
"	34s	17♂(1) 17♀(1)	---	Heberer '24, '26, '32	Z.W.Z. 123; Naturwiss. 87; Z.W.Z. 142.
"	---	15♀(1) 17♀(11)	--- -	Häcker & Matscheck '08 Matscheck '09, '10	Verh. deutsch. Zool. Ges. 18; Z.A. 34; A.Zf. 5.
D. coeruleus	28m	---	14 in ♂ and ♀ pronucleus	Amma '11	A.Zf. 6.
"	28s 28o 28m	---	---	Krimmel '10	Z.A. 35.
"	---	14♀(1)	---	Häcker & Matscheck '08, Matscheck '09	Verh. deutsch. Zool. Ges. 18; Z.A. 34.
D. denticornis	32m	---	---	Häcker '03	Jena Z. 37.
"	---	17♀(1)	---	Matschek '09, '10	Z.A. 34; A.Zf. 5.
D. gracilis	---	17♀(1)	---	Häcker & Matscheck '08, Matscheck '09	Verh. deutsch. Zool. Ges. 18, Z.A. 34.
"	32m	16♀(1)	---	Rückert '94	Anat. Hf. 4.
D. laciniatus	---	16♀(1)	---	Matscheck '09, '10	Z.A. 34; A.Zf. 5.
D. salinus	30	17♂	---	Heberer '24	Z.W.Z. 123.
"	---	17♀(1)	---	Matschek '09, '10	Z.A. 34; A.Zf. 5.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Diaptomus sp.	8s 8o 8m	8♂(1,11) 8♀(1,11)	---	Ishikawa '91	Coll. Sci. Tokyo Imp. Univ. 5.
Euchaeta marina	---	17♀(1)	---	Kornhauser '15	A.Zf. 13.
"	---	12♀(1,11)	---	Vom Rath '95	A.M.A. 46.
E. elongatus	20-30o	---	---	Heberer '30	Z.W.Z. 136.
Heterocope robusta	---	16♀(1)	---	Rückert '94	A.Hf. 4.
H. saliens	---	16♀(1)	---	Matscheck '09, '10	Z.Z. 34; A.Zf. 5.
H. weismanni	---	16♀(1)	---	Häcker & Matscheck '08, Matscheck '09, '10	Verh. deutsch. Zool. Ges. 18; Z.Z. 34; A.Zf. 5.
H. weismanni (H. borealis)	32s	16♂(1)	---	Heberer '24, '32, '38	Z.W.Z. 123, 142; B.Zbl. 58.
Paracalanus parvus	---	6♀(1)	---	Moroff '09	A.Zf. 2.
Pleuromamma abdominalis	32-34s	---	---	Heberer '32	Z.W.Z. 142.
P. gracilis	32-34s	---	---	Heberer '32	Z.W.Z. 142.
Podoplea					
Canthocamptus staphylinus	24o	12♀(1)	---	Häcker '92, '95	Z. Jb. 5; A.M.A. 45.
"	---	12♀(1)	---	Krüger '11	A.Zf. 6.
"	---	12♀(1,11)	---	Matscheck '09, '10	Z.A. 34; A.Zf. 5.
C. trispinosus	---	11♀(1)	---	Krüger '11	A. Zf. 6.
Copilia denticornis	16s	---	---	Heberer '32	Z.W.Z. 142.
Cyclops affinis	---	7♀(1)	6+X?	Matscheck '10	A.Z. 5.
C. albidus	14m	7♀(11)	---	Braun '07, '09	Z.A. 32; A.Zf. 3.
"	14	---	---	Chambers '12	Univ. Toronto Stud. 14.
"	---	7♀(1)	---	Matscheck '09, '10	Z.A. 34, A. Zf. 5.

Species	Chromosome Number 2n	n	Remarks	Observer	References
C. bicuspidatus	18m	9♀(1)	—	Braun '09	A. Zf. 3.
"	18	—	—	Chambers '12	Univ. Tronto Stud. 14.
"	—	9♀(1)	—	Matscheck '09, '10	Z.A. 34; A.Zf. 5.
C. bic. odessana	18m	9♀(1)	—	Braun '09	A.Zf. 3.
"	—	9♀(1)	—	Matscheck '10	A.Zf. 5.
C. diaphanus	12m	6♀(1)	—	Braun '09	A.Zf. 3.
C.dybowskii	18m	9♀(1)	—	Braun '09	A.Zf. 3.
"	—	9♀(1)	—	Matscheck '09, '10	Z.A. 34; A.Zf. 5.
C. fuscus	14m	7♀(1)	—	Braun '07, '09	Z.A. 32; A.Zf. 3.
"	14	—	—	Chambers '12	Univ. Toronto Stud. 14.
"	7o	7♀(1)	—	Matscheck '10	A.Zf. 5.
"	14o	7♀(1)	—	Stella '30, '31	Bol. Soc. Ital. Biol. Sper. 5; Int. Rev. Ges. Hyd. Hydrogra. 26.
C. fus. distinctus	11m	6♀(1)	F_1 of fuscus x albidus	Braun '07, '09	Z.A. 32; A.Zf. 3.
"	—	6,7♀(1)	(5-6)+X?	Matscheck '10	A.Zf. 5.
"	11m	—	—	Amma '11	A.Zf. 6.
"	14o	7♀(1)	—	Stella '30, '31	Bol. Soc. Ital. Biol. Sperm. 5; Int.Rev.Ges. Hyd.Hydrogra.26
C. gracilis	6m	3♀(1)	—	Braun '07, '09	Z.A. 32; A.Zf. 3.
Cyclops gracilis	6m	3♀(1,11)	—	Matscheck '09, '10	Z.A. 34; A.Zf. 5.
C. insignis	22m	—	—	Amma '11	A.Zf. 6.
"	22m	11♀(1)	—	Braun '09	A.Zf. 3.
"	—	11♀(1)	—	Matscheck '10	A.Zf. 5.

Species	Chromosome Number 2n	n	Remarks	Observer	References
C. leuckarti	14m	7♀(1)	---	Braun '07,'09	Z.A. 32; A.Zf. 3.
"	---	7♀(1)	---	Matscheck '10	A.Zf. 5.
C. modestus	8	---	---	Chambers '12	Univ. Toronto Stud. 14.
C. phaleratus	13m	7♀(1)	6+X?	Braun '09	A.Zf. 3.
"	7m	7♀(1) 6,7♀(11)	6+X?	Matscheck '09, '10	Z.A. 32; A.Z f. 5.
C. prasinus	11m	6♀(1)	5+X?	Braun '07, '09	Z.A. 32; A.Zf. 3.
"	---	6♀(1)	5+X?	Matscheck '10	A.Zf. 5.
C. serrulatus	14m	7♀(1)	6+m-chrom.	Braun '09	A.Zf. 3.
"	---	8♀(1)	6+2X?	Matscheck '10	A.Zf. 5.
C. signatus	8o 8m	8♀(1) 4♀(11)	---	Häcker '90, '92	Z.A. 13; Z.Jb. 5.
C. strenuus	22m	---	---	Amma '11	A.Zf. 6.
"	---	11,14♀(1)	---	Braun '07,'09	Z.A. 32; A.Zf. 3.
"	8o 8m	8♀(1) 4♀(11)	---	Häcker '90,'92, '93,'94	Z.A. 13; Z.Jb. 5; A.M.A. 41; 43.
"	20s	11♀(1,11)	---	Lérat '05	L.C. 22.
"	---	11♀(1)	---	Matscheck '10	A.Zf. 5.
"	22-24m	11-12♀(1)	---	Rückert'94,'95	A.Hf. 4; A.M.A. 45.
C. vernalis	10m	5♀(1)	---	Braun '09	A.Zf. 3.
"	---	5,6♀(1)	5+X?	Matscheck '09, '10	Z.A. 34; A.Zf. 5.
C. viridis	12m	6♀(1)	---	Amma '11	A.Zf. 6.
"	12	---	---	Chambers '12	Univ. Toronto Stud. 14.
"	12m	6♀(1)	---	Braun '09	A.ZF. 3.
"	12m 12-15m	---	---	Heberer '26, '27	Naturwiss. 87; Z.M.A.F. 10.
"	12s 12o	---	---	Krimmel '10	Z.A. 35.

Species	Chromosome Number 2n	n	Remarks	Observer	References
C. viridis	---	6♀(1)	---	Matscheck '10	A.Zf. 5.
"	12m 14m	---	---	Schiller '08	Z.A. 32.
Cyclops viridis	12o	6♀(1)	---	Stella '31	Int. Rev. Ges. Hyd. Hydrogra. 21.
C. viridis =C. brevicornis	24m	12♀(1,11)	---	Häcker '95,'97, '03,'04	A.M.A. 46; B. Zbl. 17; Jena Z. 37; Z. Jb. Suppl. 7.
C. vir. americanus	10s 10o 10m	5♂(1,11) 5♀(1,11)	---	Chambers '12	Univ. Toronto Stud. 14.
C. vir. brevispinosus	4o	2♀(1,11)	---	Chambers '12	Univ. Toronto Stud. 14.
C. vir. parcus	6o	3♀(1,11)	---	Chambers '12	Univ. Toronto Stud. 14.
Hersilia apodiformis	24s 24o 24m	12♂(1,11) 12♀(1)	2X-0♂?	Kornhauser '15	A.Zf. 13.
Mytilicola intestinalis	22o 22m	11♀(1)	---	Ahrens '37,'39, '39	Z.A. 120; Z.M.A. F. 46; Z.W.Z. 152.
Nitocra hibernica	---	8♀(1)	---	Krüger '11	A.Zf. 6.
Orthagoriscicola muricata	16o	8♀(1)	---	McClendon '10	A.Zf. 5.
Sapphirina ovatolancealata	16s	8♂(1)	---	Heberer '32	Z.W.Z. 142.
Sapphirina sp.	16s	---	---	Kornhauser '15	A.Zf. 13.
Caligi					
Laemargus muricatus	16s 16o	8♂(1,11)	---	McClendon '06	B.B. 12.
Pandarus sinuatus	16s 16o	8♂(1,11) 8♀(1,11)	---	McClendon '06, '07, '10	B.B. 12, 13; A.Zf. 5.

CIRRIPEDIA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Lepas anatifera	---	4–12♀(11)	---	Groom '94	Phil. Trans. Roy. Soc. B. 185.
"	26s 26o	13♂(1) 13♀(1)	---	Witschi '35	B.B. 68.
Scalpellum scalpellum	32s 32o	16♂(1) 16♀(1)	---	Krüger '20	Z.I.A.V. 24.
Tetraclita squamosa japonica	32s	16♂(1)	---	Iwasa '32	Z.M. (Jap.) 44.

ISOPODA

Species	Chromosome Numbers 2n	n	Remarks	Observer	References
Oniscoidea					
Armadillidium opacum	54s	27♂(1)	---	Radu '30	C.R.S.B. 105.
A. vulgare	54s	---	---	Radu '31	Mem. Sect. Sti. Acad. Romania, (3) 8.
"	54s	27♂(1,11)	---	Kato '49	Oguma Comm. Vol. Cyt. Genet. 2.
"	---	28♀(1)	---	Vandel '41, '47	Cyt. 12; B.B. Fr. Belg. 81.
A. nasatum	---	28♀(1)	---	"	"
Chaetophiloscia elongata	---	24♀(1)	---	"	"
Ligia italica	---	28♂(1)	---	Mir '39	C.R.A.S. 209.
L. exotica	72x	36♂(1,11)	---	Kato '49	Oguma Comm. Vol. cyt. Genet. 2.
L. oceanica	---	30♂(1)	---	Mir '39	C.R.A.S. 209.
Ligidium Hypnorum	---	31♂(1)	---	"	"
Nagara modesta	34–36o,♀m	34♀(1) 17♀(11)	Parth. 4n?	Hill '48	Chrom. 3.
Oniscus asellus	32s	16♂(1)	---	Nichols '01, '02, '09	A.N. 35; Amer. Phil. Soc. 41; J.M. 20.
Philoscia muscorum	---	24♀(1)	---	Vandel '41, '47	Cyt. 12: B.B. Fr. Belg. 81.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Porcellio gallicus	---	28♀(1)	---	Vandel '41, '47	Cyt. 12: B.B. Fr. Belg. 81.
P. laevis	---	28♀(1)	---	"	"
P. scaber	56s	28♂(1,11)	---	Imai & Makino '40	Jap. J.G. 16.
"	---	28♀(1)	---	Vandel '41, '47	Cyt. 12: B.B. Fr. Belg. 81.
Trichoniscus biformatus	16s	8♂(1)	---	Vandel '26, '28, '34, '47	C.R.A.S. 183; B.B. Fr. Belg. 62, 68, 81.
T. elisabethae	16s 24s,m (Parth.)	8♂(1) 24♂(1)	2n, bisexual race. 3n, parth. race. No meiotic synapsis in 3n.	"	"
Trichoniscus provisorius	16m 24m (Parth.)	8♂(1)	As above	"	"
Tylos latreillei	---	Ca60♂(1)	---	Vandel '47	B.B. Fr. Belg. 81.
Asellota					
Asellus aquaticus	20-30s	8-10♂(1)	---	Carnoy '85	L.C. 1.
"	17s	8,9♂(1)	---	Dworak '35	Fol. Morph. 5.
"	16s	8♂(1) 8♀(1)	---	Vandel '38, '47	C.R.A.S. 206: B.B. Fr. Belg. 81.
A. meridianus	---	8♂(1)	---	Vandel '47	B.B. Fr. Belg. 81.
A. nipponensis	14s	7♂(1,11)	---	Sugiyama '33	J.F.S. Tokyo I.U. IV, 3.
Proasellus meridianus	16s	8♂(1)	---	Vandel '38	C.R.A.S. 206.
Steanasellus virei	---	24-26♂(1)	---	Vandel '38	"
Stenasellus virea	---	27♂(1)	---	Vandel '41, '47	Cyt. 12: B.B. Fr. Belg. 81.

ISOPODA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Valvifera					
Idotea basteri	---	29♂(1)	---	Vandel '47	B.B. Fr. Belg. 81.
Irrorata	---	28♂(1)	---	Nichols '09	J.M. 20.
Flabellifera					
Anilocra mediterranea	12s 12o	6♂(1)	---	Callan '40	Q.J.M.S. 82.
Epicaridea					
Epipenaeon japonica	14m	---	8 in egg nucleus	Hiraiwa '36	J.S. Hiroshima U. Sér. B. 4.

AMPHIPODA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Anisogammarus annandalei	54s	27♂(1)	X-Y ♂. From correction in 1950.	Niiyama '35, '50	Jap. J.G. 11; Ann. Zool. Jap. 23.
Gammarus chevreuxi	26s	13♂(1)	X-Y ♂	Palmer '25, '26	Nat. 116; Q.J.M.S. 70.
G. duebeni	---	13♀(1)	---	Roux '33	B.B. Fr. Bel. Suppl. 16.
G. locusta	---	26♂(1)	---	Poisson & Calvez '48	C.R.A.S. 227.
G. pulex	52s	"	---	"	"
Orchestia gammarella	---	25♂(1)	---	"	"
Talitrus saltator	---	"	---	"	"
Talorchestia longicornis	---	18♂(1)	---	Nichols '09	J.M. 20.

Species	Chromosomes Number 2n	n	Remarks	Observer	References
Reptantia					
Astacus fluviatilis	---	Ca 58♂(1)	---	Prowazek '02	Z.W.Z. 71
Carcinus menas	---	30-40♂(1)	---	Carnoy '85	L.C. 1.
Cambaroides japonicus	196s	98♂(1,11)	---	Niiyama '34	J.F.S. Hokkaido I.U. Ser. Vi, 3.
Cambarus immunis?	---	104♂(1)	8X-0♂?	Fasten '14	J.M. 25.
C. clarkii	200s	100♂(1,11)	---	Niiyama '41	Jap. J.G. 17.
C. virilis	200s	100♂(1,11)	---	Fasten '14	J.M. 25.
Cancer gracilis	---	52♂(1)	---	Fasten '24	J.M. 39.
C. magister	100s	60♂(1,11)	---	Fasten '18	B.B. 34.
C. oregonensis	---	56♂(1)	---	Fasten '24	J.M. 39.
C. productus	---	58♂(1)	---	"	"
Clibanarius olivaceous	116s	58♂(1)	---	Rathnavathy '41	Proc. Indian Acad. Sci. B. 13.
Eriocheir japonicus	148s	74♂(1,11)	X-Y♂	Niiyama '37	J.F.S. Hokkaido I.U. Ser. VI, 5.
Eupagurus prideauxii	---	12♀(1)	---	Weismann & Ishikawa '88	Z. Jb. 3.
E. ochotensis	254s	127♂(1,11)	---	Niiyama '50	La Kromosomo 6.
Euphasidae	38m	---	sp. name not given	Taube '09	Z.W.Z. 92.
Gebia major	82s 82o	41♂(1)	---	Oka '41	J.F.S.I.U. Tokyo Sec. IV. 5.
Hemigrapsus sanguineus	128s	64♂(1,11)	X-Y♂	Niiyama '38	Jap. J.G. 14.
Hippa talpoides	---	60♂(1)	---	Nichols '09	J.M. 20.
Homarus sp.	---	18♂(1)	---	Labbé '04	C.R.A.S. 138.
Lophopanopeus bellus	---	62♂(1)	---	Fasten '26	B.B. 50.
Macrocheira kampferi	106s	53♂(1,11)	---	Niiyama '39	Jap. J.G. 15.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Matuta lunaris	94s	47♂(1,11)	---	Niiyama '42	Z.M. (Jap.) 54.
Menippe mercenaria	51-80s	25-28♀(11)	---	Binford '13	J.M. 25.
Nephrops japonicus	164s	82♂(1,11)	---	Niiyama '39	Jap. J.G. 15.
Nephropsis carpenteri	152s	76♂(1,11)	---	"	"
Ovalipes punctatus	103s	52♂(1) 51,52♂(11)	X-O♂	Niiyama '40	Jap. J.G. 16.
Panuliros japanicus	140s	70♂(1,11)	---	Niiyama '36a,b	J.F.S. Hokkaido I.U. Ser. VI. 5. Jap. J.G. 12.
Paralithodes camtschatica	208s	104♂(1,11)	---	Niiyama '35a,b	J.F.S. Hokkaido I.U. Ser. VI, 4; Jap. J.G. 11.
Penaeus japonicus	92s	46♂(1,11)	Sex-chrom. unknown	Niiyama '48	Oguma Comm. Vol. Cyt. Genet. 1.
Plagusia dentipes	106s	53♂(1,11)	X-Y♂	Niiyama '37a,b	J.F.S. Hokkaido I.U. Ser. VI, 5; Jap. J.G. 13.
Potamon dehani	82s	41♂(1,11)	---	Yanagita '44	S.R. Tokyo B.D. Sec. B, 6.
Ranina ranina	106s	53♂(1,11)	---	Niiyama '42	Z.M. (Jap.) 54.
Scylla serrata	106s	53♂(1,11)	---	"	"
Telmessus cheiragonus	124s	62♂(1,11)	---	"	"
Telphusa fluviatillis	78s	39♂(1)	2X-O♂	Delpino '34a,b.	Arch. Zool. Ital. 21; Atti. Acad. Mag. Lincei, 6.
Natantia					
Crangon cataphractus	---	40-44♂(1)	---	Carnoy '85	L.C. 1.
Pandulus borealis	---	34♂(1)	2X-O♂?	Leopoldseder '34	Z.W.Z. 145.

STOMATOPODA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Squilla mantis	---	20-24♂(1)	---	Carnoy '85	L.C. 1.
S. oratoria	48s	24♂(1,11)	---	Komai '20	J.M. 34.

ACERATA
ARACHNIDA
ACARIDA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Argas columbarum	26s 26o	13♂(1)	X-Y♂ X-X♀	Oppermann'35	Z.M.A.F. 37.
Gamasus brevicornis	12s	6♂(1)	---	Sokolow '34	Z.Z.M.A. 21.
G. krapelini	12s	---	---	"	"
G. magnus	10s	Ca5♂(1)	---	"	"
G. septentrionrlis	12s	---	---	"	"
Gamasus sp."5"	10s	5♂(1)	---	"	"
Gamasus sp."6"	10-12s?	---	---	"	"
Hyalomma aegyptium	---	Ca12♂(1)	---	Tuzet & Millot '37	B.B. Fr. Bel. 71.
Ixodes reduvius	Ca28s	14♂(1)	---	Nordenskiöld '09	Z.A. 34.
I. ricinus	28s	---	---	Nordenskiöld '20	Parasit. 12.
Pediculopsis graminum	3m (Parth. egg) 6m (Fertil. egg) 6o	3♀(1)	Haploid parth.	Cooper '37, '39	Proc. Nat. Acad. Sci. 23; Chrom. 1.
"	4m	---	2 in ♂ and ♀ pronucleus	Reuter '09	Acta. Soc. Sc. Fen. 37.

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ACERATA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pediculoides ventricosus	3m (Parth. egg) 6m (Fertil. egg)	3♀(1,11)	Haploid parth.	Pätau '36	Z. Jb.(Phys.) 56.
Rhipicephalus evertsi	---	8(tid)	---	Warren '31	Nature 128.
Tetranychus bimaculatus	3s 6o 3m (Parth. egg) 6m (Fertil. egg)	3(tid) 3♀(1,11)	---	Schrader '23	A.M.A. 97.

ARANEIDA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Labidognatha Agalenidae					
Agalena naevia	---	Ca15♂(1)	---	Painter '14	Z.Jb. 38.
"	52s(?)	25,27(?) (tid)	X_1X_2-0?	Wallace '00, '05, '09	A.A. 18; B.B. 8; B.B. 17.
A. opulenta	44s	23♂(1) 23,21♂(1)	X_1X_2-0♂	Suzuki '50	Z.M.(Jap.) 59.
Hahnia nava	---	18♂(1) 18♀(1)	X_1X_2-0♂ $X_1X_1X_2X_2$♀	Hackman'48	Acta Zool. Fenn. 54.
Tegenaria atrica	---	18-24♂(1)	---	Carnoy '85	L.C. 1.
"	42s	22♂(1)	X_1X_2-0♂	Revell '47	Heredity 1.
T. derhami	43s	23♂(1)	$X_1X_2X_3$-0♂	"	"
"	---	19♂(1) 16,19♂(11)	"	Hackman '48	Acta Zool. Fenn. 54.
T. domestica (=ferruginea)	43s	23♂(1)	"	Revell '47	Heredity 1.
Tagenaria sp.	---	6-12♂(1)	---	Carnoy '85	L.C. 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Amaurobidae					
Amaurobius sylvestris	—	17+♂(11)	X-0♂	Painter '14	Z. Jb. 38.
Argiopidae					
Aranea angulata	—	13♂(1) 11,13♂(11)	X_1X_2-0♂	Hackman '48	Acta Zool. Fenn. 54.
A. cucurbitina	—	13♂(1)	"	"	"
A. diadematа	—	13♂(1), ♀(1) 11,13♂(11)	"	"	"
A. dumetorum	14s	8♂(1) 6,8♂(11)	"	"	"
A. foliata	24s	13♂(1)	"	"	"
A. sexpunctata	—	"	"	"	"
A. reaumuri	—	"	"	Pätau '48	Heredity 2.
Araneus sp.	24s	13♂(1) 11,13♂(11)	"	Suzuki '50	Z.M.(Jap.) 59.
Argiope amoena	"	"	"	"	"
Cyclosa 8-tuberculata	24s,26o	13♂(1)	"	Suzuki '49,'50	Z.M.(Jap.) 58,59.
Epeira scolopetaria	23s	12♂(1) 11,12♂(11)	X-0♂	Berry '06	B.B. 11.
Meta reticulata	—	13♂(1)	X_1X_2-0♂	Hackman '48	Acta Zool. Fenn. 54.
Nephila clavata	—	13♂(1) 11,13♂(11)	"	Suzuki '50	Z.M.(Jap.) 59.
Tetragnatha japonica	24s	13♂(1)	"	Suzuki '49	Z.M.(Jap.) 58.
Zilla stroemi	—	"	"	Hackman '48	Acta Zool. Fenn. 54.
Anyphaenidae					
Anyphaena accentuata	—	14♂(1),14♀(1)	"	"	"
Saltibunda	—	10♂(1)	X-0♂	Painter '14	Z. Jb. 38.
Argyronetidae					
Argyroneta aquatica	—	13?♂(1)	X_1X_2-0♂	Hackman '48	Acta Zool. Fenn. 54.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Atypidae					
Atypus karschi	---	23♂(1)	X_1X_2-0♂	Suzuki '49	Z.M.(Jap.) 58.
Clubionidae					
Clubiona holosericea	---	12♂(1)	X_1X_2-0♂	Hackman '48	Acta Zool. Fenn. 54.
C. japonicola	20s	11♂(1) 11,9♂(11)	X_1X_2-0♂	Suzuki '50	Z.M.(Jap.) 59.
C. phragmitidis	---	12♂(1) 10,12♂(11)	X_1X_2-0♂	Hackman '48	Acta Zool. Fenn. 54.
C. subsultans	---	"	"	"	"
Clubiona sp.	---	22-26♂(1)	---	Carnoy '85	L.C. 1.
Micaria decorata	---	12♂(1) 10,12♂(1)	X_1X_2-0♂	Hackman '48	Acta. Zool. Fenn. 54.
Dictynidae					
Dictyna arundinacea	±24s	13♂(1) 11,12♂(11)	"	"	"
Drassidae					
Callipes imbecilla	---	11♂(1)	X-0♂	Painter '14	Z. Jb. 38.
Callilepid nocturna	---	12♂(1) 10,12♂(11)	X_1X_2-0♂	Hackman '48	Acta Zool. Fenn. 54.
Berlandina cinerea	±22s	"	"	"	"
Drassodea lapidosus	---	"	"	"	"
Gnaphosa muscorum	---	"	"	"	"
Haplodrassus cognatus	---	12♂(1)	"	"	"
Poecilochroa variana	---	12♂(1) 10,12♂(11)	"	"	"
Zelotes subterraneus	---	"	"	"	"
Linyphiidae					
Drapetisca socialis	24s	13♂(1)	X_1X_2-0♂	Hackman '48	Acta Zool. Fenn. 54.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Leptyphanthanthes minutus	---	13♂(1)	X_1X_2-0♂	Hackman '48	Acta Zool. Fenn. 54.
Linyphia marginata	---	12?♂(1)	"	"	"
L. resupina domestica	---	13?♂(1)	"	"	"
Linyphia sp.	---	13♂(1)	"	"	"
Liphistiidae					
Heptathela kimurai	80s	40♂(1)	X_1X_2-0♂	Suzuki '49	Z.M.(Jap.) 58.
Lycosidae					
Arctosa leopardus	---	14♂(1) 12,15♂(11)	X_1X_2-0♂	Hackman '48	Acta. Zool. Fenn. 54.
A. alpigena	---	14♂(1)	"	"	"
Lycosa communis	---	11♂(1)	X-0♂	Painter '14	Z. Jb. 38.
L. insopita	28s	13♂(1) 13(12-15)♂(11)	X-Y♂?	Montgomery '05	Proc. Acad. Nat. Sci. Phila. 57.
L. fluviatilis	---	15♂(1),♀(1) 13,15♂(11)	X_1X_2-0♂	Hackman '48	Acta. Zool. Fenn. 54.
L. monticola	---	"	"	"	"
L. paludicola	---	"	"	"	"
L. pullata	---	15♂(1)	"	"	"
L. saccata	±28	15♂(1) 13,15♂(11)	"	"	"
L. T-insignita	28s	15♂(1) 13,15♂(11)	"	Suzuki '50	Z.M.(Jap.) 59.
Lycosa tarsalis	---	15♂(1)	X_1X_2-0♂	Hackman '48	Acta Zool. Fenn. 54.
Pirata piraticus	---	14♂(1) 12,14♂(11)	"	"	"
P. uliginosus	---	13♂(1)	"	"	"
Schizocosa crassipes	22s	12♂(1) 10,12♂(11)	X_1X_2-0♂	Hard '39	J.M. 65.
Tarentula pulverulenta	---	15♂(1) 13,15♂(11)	"	Hackman '48	Acta. Zool. Fenn. 54.

Species	Chromosome Number 2n	n	Remarks	Observer	References
T. aculeata	---	15♂(1) 13,15♂(11)	X_1X_2-0♂	Hackman '48	Acta. Zool. Fenn. 54.
Trochosa ruricola	26s 28o	14♂(1) 12,14♂(11) 14♀(1)	"	"	"
T. spinipalpis	---	14♂(1)	"	"	"
Xerolycosa nemoralis	---	"	"	"	"
X. miniata	---	12♂(1) 10,12♂(11)	"	"	"
Micryphanthidae					
Gongylidium rufipes	---	12♂(1)	"	"	"
Oxyopidae					
Oxyopes ramosus	21s	11♂(1) 10,11♂(11)	X-0♂	"	"
O. salticus	---	11♂(1)	X-0♂	Painter '14	Z. Jb. 38.
O. sertatus	21s	11(1) 10,11(11)	"	Suzuki '50	Z.M.(Jap.) 59.
Pisauridae					
Dolomedes fontanus	---	13♂(1)	X_1X_2-0?	Painter '14	Z. Jb. 38.
D. fimbriatus	---	13♂(1) 11,13♂(11)	X_1X_2-0♂	Hackman '48	Acta Zool. Fenn. 54.
D. pallitarsus	28s	15♂(1) 13,15♂(11)	"	Suzuki '50	Z.M.(Jap.) 59.
Pisaura listeri	---	15♂(1) 13,15♂(11)	"	Hackman '48	Acta Zool. Fenn. 54.
Philodromidae					
Philodromus aureolus	---	15♂(1) 13,15♂(11)	"	"	"
P. emarginatus	---	"	"	"	"
P. histrio	---	15♂(1)	"	"	"
P. laevipes	---	"	"	"	"
P. roseus	28s	15♂(1) 13,15♂(11)	"	Suzuki '50	Z.M.(Jap.) 59.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Thanatus formicinus	---	15♂(1) 13,15♂(11)	X_1X_2-0♂	Hackman '48	Acta Zool. Fenn. 54.
Tibellus oblongus	---	13♂(1) 11,13♂(11)	"	"	"
Pholcidae					
Spermaphora meridionalis	---	(Number not given.)	X_1X_2-0♂	Painter '14	Z. Jb. 38.
Salticidae					
Dendryphanthes rudis	---	15♂(1)	X_1X_2-0♂	Hackman '48	Acta. Zool. Fenn. 54.
Evarcha falcata	---	15♂(1) 13,15♂(11)	"	"	"
Icius elongatus	28s	15♂(1) 13,15♂(11)	"	Suzuki '50	Z.M.(Jap.) 59.
I. magister	"	"	"	"	"
Myrmarachne formicaria	---	12♂(1)	X-0♂	Hackman '48	Acta Zool. Fenn. 54.
Maevia vittata	28+s 29+o	15♂(1)	X-0♂	Painter '14	Z. Jb. 38.
Plexippus paykulli	28s	15♂(1) 13,15♂(11)	X_1X_2-0♂	Suzuki '50	Z.M.(Jap.) 59.
Plexippus sp.	"	"	"	"	"
Pseudicius encarpatus	---	15♂(1)	"	Hackman '48	Acta Zool. Fenn. 54.
Salticus scenicus	---	"	"	"	"
Sitticus terebratus	---	15♂(1) 13,15♂(11)	"	"	"
Sparassidae					
Heteropoda venatoria	41s 44o,♀m	22♂(1) 19,22♂(11)	$X_1X_2X_3$-0♂	Suzuki & Okada'50	J.S.Hiroshima U. Ser.B, 11.
Micrommata viridissima	±35s	19?♂(1)	$X_1X_2X_3$-0♂?	Hackman'48	Acta Zool. Fenn. 54.
Tetragnathidae					
Tetragnatha extensa	±22s	12♂(1) 10,12♂(11)	X_1X_2-0♂	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
T. japonica	24s	13♂(1) 11,13♂(11)	"	Suzuki '50	Z.M.(Jap.) 59.
T. squamata	22s	12♂(1) 10,12♂(11)	"	"	"
Tetragnatha sp. (obtusa?)	---	"	"	Hackman '48	Acta. Zool. Fenn. 54.
Theridiidae					
Ariamnes cylindrogaster	22s	12♂(1) 10,12♂(11)	"	Suzuki '50	Z.M.(Jap.) 59.
Steatoda bipunctata	---	12♂(1)	"	Hackman '48	Acta. Zool. Fenn. 54.
Theridium tepidariorum	---	"	"	"	"
"	24m	12♀(1,11)	---	Montgomery '07	Z. Jb. 25.
Thomisidae					
Misumea tricuspidata	24s	12♂(1)	"	Suzuki '49	Z.M.(Jap.) 58.
Xysticidae					
Misumena vatia	---	12♂(1)	X-0♂	Hackman '48	Acta. Zool. Fenn. 54.
M. tricuspidata	23s	12♂(1) 11,12♂(11)	"	Suzuki '50	Z.M.(Jap.) 59.
Xysticus ephippiatus	"	"	"	"	"
X. ulmi	---	12♂(1),♀(1) 11,12♂(11)	"	Hackman '48	Acta Zool. Fenn. 54.
X. viaticus	23	12♂(1)	"	"	"
X. triguttatus	---	11♂(1)	X-0♂	Painter '14	Z. Jb. 38.
Orthognatha Aviculariidae					
Dugesiella hentzi	---	22♂(1)	X-0♂	Painter '14	Z. Jb. 38.

PEDIPALPIDA

Species	Chromosome Numbers 2n	n	Remarks	Observer	References
Thelyphonus sepiaris	---	25♂(1)	X-0♂	Millot & Tuzet '34	B.B. Fr. Bel. 68.

OPILIONIDA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Gagrellopsis nodulifera	16s	8♂(1,11)	---	Tomohiro '40	J.S. Hiroshima U. Ser. B. Div. 1,7.
Gagrellula ferruginea	22s	11♂(1,11)	---	Suzuki '41	Z.M.(Jap.) 53.
Liobunum japonicum	20s	10♂(1,11)	---	"	"
L. rupestre	22s	11♂(1,11)	---	Sokolow '29	Z.Z.M.A. 10.
Melanopa sp.	20s	10♂(1,11)	---	Suzuki '41	Z.M.(Jap.) 53.
Metagagrella sp.	20s	10♂(1,11)	---	"	"
Mitopus morio	32s	16♂(1,11)	---	Sokolow '29	Z.Z.M.A. 10.
Nemastoma lugubre	16s	---	---	"	"
Oligolophus aspersus	20s	10♂(1,11)	---	Suzuki '41	Z.M.(Jap.) 53.
O. triens	16s	8♂(1,11)	---	Sokolow '29	Z.Z.M.A. 10.
Opilio parietinum	24s	12♂(1,11)	---	"	"
Phalangium opilio	---	16♂(1,11)	---	"	"
Platybunus triangularis	---	18♂(1,11)	---	"	"

PSEUDOSCORPIONIDA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Chelanops cyrneus	61-62x	31♂(1)	X_1X_2-0♂	Sokolow '26	Z.Z.M.A. 3.
Obisium muscorum	67-68s	34♂(1)	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ananteris balzani	12m	---	---	Piza '47	Luiz de Queiroz 4.
Buthus eupeus	Ca22s	---	---	Sokolow '13	A.Zf. 9.
B. martensii	24s	12♂(1,11)	---	Sato '36, '40	Z.M.(Jap.) 48; J. S. Hiroshima U. Ser. B. Div. 1, 8.
Bothrirus sp.	36s	---	---	Piza '47	Luiz de Queiroz 4.
Isometrus maculatus	12s	$2_{II}+1_{VIII}$, ♂(1) 6♂(11)	Trans-location occurs.	"	"
Centrurus exilicauda	26s	13♂(1)	---	Wilson '16, '31	Proc. Nat. Acad. Sci. 2; J.M. 52.
Euscorpius carpathicus	70-84s	28-40♂(1,11)	---	Sokolow '13	A.Zf. 9.
Hadrurus hirsutus	Ca100s	Ca50♂(1)	---	Wilson '31	J.M. 52.
Opisthacanthus elatus	Ca60-62s	---	---	Wilson '16, '31	Proc. Nat. Acad. Sci. 2; J.M. 52.
Scorpio occitanus	---	22-28♂(1)	---	Carnoy '85	L.C. 1.
Tityus bahiensis	6s	3♂(1,11)	Normal indiv.	Piza '39, '41, '43, '44, '46, '47	Sci. Genetica 1: J.H. 32: Rev. de Agric. 18, 19: Luiz de Queiroz 3, 4.
"	9s,10o	$1_{VII}+1_{II}$, ♂(1) 4,5♂(11)	Normal in phenotype	Piza '47,'48	Luiz de Queiroz 4: Rev. de Agric. 24.
"	7s	1 hepta- valent, ♂(1) 3,4♂(11)	Normal in phenotype	Piza '48	Rev. de Agric. 24.
"	10s,♀m	5♂(1) 5♂(11)	"	"	"
"	20s,♀m	10♂(11)	4n, germ cells	"	"
T. mattogrossensis	20s	10♂(1,11)	---	Piza '47	Luiz de Queiroz 4.

Species	Chromosome Number 2n	n	Remarks	Observer	References
T. mattogrossensis	---	14,9,8♂(11)	Abnormal	Piza '47	Luiz de Queiroz 4.
T. serrulatus	12s	---	---	"	"
T. trivittatus	14s,♀om	5$_{II}$+1$_{IIII}$, ♂(1) 7♂(11)	---	Piza '48	Rev. de Agric. 24.
Vejovis boreus	Ca100s	Ca50♂(1)	---	Wilson '31	J.M. 52.

GIGANTOSTRACA
XIPHOSURA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Tachypleus tridentatus	26s	13♂(1,11)	sex chrom. unknown.	Okada '38	J. S. Hirosima U. Ser. B. 6.

ONYCHOPHORA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Peripatus sp.	28(23-34)s 28♀,m	14♂(1,11)	---	Montgomery '00	Z. Jb. 14.

LINGUATULIDA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Porocephalas armillatus	20♀	10♀(1)	---	Haffner '22a,b	Z.A. 54, 54.

TARDIGRADA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Macrobiotus lacustris	10m	5♀(1,11)	---	Von Wenck '14	Z. Jb. (Anat.) 37.

OPISTHOGONEATA
CHILOPODA*

Species	Chromosome Number 2n	n	Remarks	Observer	References
Geophilus linearis	---	8♂(1,11)	---	Bouin & Collin '01, P. & M. Bouin '03	A.A. 20; C.R.S. B. 55.
Lithobius forficatus	---	16-24♂(1)	---	Carnoy '85	L.C. 1.
"	---	22-24♂(1)	---	P.& M. Bouin '02	C.R. Ass. Anat. 4.
L. mordax, L. multidentatus, Lithobius sp.	---	25♂(1)	X-0♂?	Blackmann'07	Proc. Am. Acad. Arts. Sci. 42.
Scolopendra cingulata	28-32s	14-16♂(1,11)	---	Bouin '20, '22, '25	C.R.S.B. 83; C.A. A.S. 174; L.C. 35.
S. dalmatica	---	20-24♂(1)	---	Carnoy '85	L.C. 1.
S. damnosa	28s	14♂(1,11)	Sex chrom. unknown	Makino & Niiyama '42	Jap. J. G. 18.
S. heros	33s	17♂(1) 16,17♂(11)	X-0♂	Blackmann '03 '05, '10	B.B. 5; Bull. Mus. Comp. Zool. Harvard 48; B.B. 19.
S. subspinipes japonica	18s	9♂(1,11)	Sex chrom. unknown	Ogawa '50	Z. M. (Jap.) 59.
S. s. mutilans	28s	14♂(1,11)	"	"	"
Scutigera coleoptrata	---	17-18♂(1)	X-0♂	Bouin & Ancel '11, Bouin '34	C.R. Ass. Anat. 13; A.Z.E.G. 75.
S. forceps	37s	19♂(1) 18,19♂(11)	X-0♂	Medes '05	B.B. 9.
Thereuonema hilgendorfi	36s	18♂(1,11)	X-Y♂. X disjoins from Y in II-div.	Ogawa '50	Z.M.(Jap.) 59; Jap.J.G. 25.

*Nath, V. 1925. Spermatogenesis of Lithobius forficarus. Proc. Cambr. Phil. Soc. 1:270-277. (Not accessible).

PROGONEATA
DIPLOPODA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pachyiulus varius	25s	13♂(1) 12,13♂(11)	X-0♂	Oettinger '08, '09	Z.A. 33; A.Zf. 3.
Polyxenus sp.	Cal6s	8♂(1,11)	---	Sokoloff '14	Z.A. 44.

INSECTA
APTERYGOTA
COLLEMBOLA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Anurida maritima	8o 8(?)m	---	---	Claypole '98	J.M. 14.
Orchesella villosa	---	6♀(1)?	---	Lecaillon '01	Arch. d'Anat. Micr. 4.
Podura aquatica	8o	---	---	Willem '00	Mem. Couronées Acad. Roy. Belg. 58.

THYSANURA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Lepisma domestica	34s	18♂(1) 16,18♂(11)	X_1X_2-0♂	Charlton '21	J.M. 35.
Lepisma (Thermobia) domestica	34s 36o	18♂(1) 16,18♂(11)	X_1X_2-0♂ X_1X_1-X_2X_2♀	Perrot '33	Z.Z.M.A. 18.
L. saccharina (?)	---	29♂(1)	X-0	Itoh '33	Z.M.(Jap.) 45.

PTERYGOTA
ORTHOPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Acrididae					
Acrida exaltata	23s	12♂(1) 11,12♂(11)	X-0♂	Asana, Makino & Niiyama '39	Jap. J.G. 15.

Species	Chromosome Number 2n	n	Remarks	Observer	References
A. turrita	23s	12♂(1) 11,12♂(11)	X-0♂	Momma '43	J.F.S. Hokkaido I.U. 9.
Acolophitus sp.	"	"	"	McClung '14	J.M. 25.
Acrotylus insubricus	"	---	"	Kowalski '25	L.C. 36.
Aeoloplus sp.	"	12♂(1) 11,12♂(11)	"	McClung '14	J.M. 25.
Aeropedellus clavatus	"	---	---	Carlson '36	J.M. 59.
Aiolopus tamulus	"	12♂(1) 11,12♂(11)	X-0♂	Asana, Makino & Niiyama '39	Jap. J.G. 15.
"	"	"	"	Momma '43	J.F.S. Hokkaido I.U. 9.
Aleuas vitticollis	19s	---	4 multiple chroms.	Saez '30, '31	Acta Cong. Int. Biol. Montevideo 7; Rev. Museo Plata 33.
Amphitornus sp.	23s	12♂(1) 11,12♂(11)	X-0♂	McClung '14	J.M. 25.
Arphia pseudonietana	"	---	---	Meek'13	P.R.S. London B 203.
A. simplex	"	12♂(1) 11,12♂(11)	X-0♂	Carothers '13	J.M. 24.
Arphia sp.	"	"	"	McClung '14	J.M. 25.
A. sulphurea	---	12mo	---	Slifer & King '34	J.M. 56
A. tenebrosa	23s	12♂(1) 11,12♂(11)	X-0♂	Davis '08	Bull. Mus. Comp. Zool. Harvard 53.
"	24s	13♂(1) 11,12,13♂(11)	2X♂	"	"
Atractomorpha ambigua	19s	10♂(1) 9,10♂(11)	X-0♂	Momma '43	J.F.S. Hokkaido I.U. 9.
A. bedeli	"	"	"	Machida '17	Jour. Coll. Agri. Imp. Univ. Tokyo 6.
A. crenulata	"	"	"	Ramachandra '37	J.M. 61.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Aularches miliaris	19s	10♂(1) 9,10♂(11)	X-0♂	Ramachandra '34,'37	Proc. Indian Acad. Sci. 1; J.M. 61.
Aulocara sp.	23s	12♂(1) 11,12♂(11)	"	McClung '14	J.M. 25.
Boopedon sp.	"	"	"	"	"
Brachystola magna	"	"	"	Carothers '13	J.M. 24.
"	23s 22o	"	"	Sutton '02	B.B. 4.
Brachystola sp.	23s	"	"	McClung '14	J.M. 25.
Camnula pellucida	23s (23-25)	"	X-0♂ 1-2 super-numeraries	Carroll '20	J.M. 34.
Camnula sp.	"	"	X-0♂	McClung '14	J.M. 25.
Chloealtis conspersa	17s	9♂(1)	X-0♂	McClung '30	Acta Cong. Int. Biol. Montevideo 7.
Chloealtis genicularibus	17s	8,9♂(11)	X-0♂	Shimakura, Fukuhara & Nakahara '49	Z.M.(Jap.)58.
Chondracris rosea	23s	12♂(1) 11,12♂(11)	"	Wu '38	Cyt. 9.
Chorthippus albomarginatus	17s	9♂(1)	"	McClung '30	Acta Cong. Int. Biol. Montevideo 7.
C. bicolor	"	9♂(1) 8,9♂(11)	"	Momma '43	J.F.S. Hokkaido I.U. 9.
C. bicolor x C. biguttulus	"	9♂(1)	"	Klingstedt '39	J.G. 37.
C. curtipennis	"	---	---	Carlson '36	J.M. 59.
"	17s	9♂(1)	X-0♂	McClung '30	Acta Cong. Int. Biol. Montevideo 7.
C. (Stenobothrus) curtipennis	---	8,9♂(11)	"	Robertson '16	J.M. 27.
"	---	9♂(1)	"	Wenrich '17	J.M. 29.

Species	Chromosome Number 2n	n	Remarks	Observer	References
C.(S.) lineatus	17s	9♂(1)	X-0♂	Belar '25	Roux 116.
C. longicornis	17s (Normal) 15s (Translocation)	---	X-0♂; Recipr. trans-location occurs.	Coleman '47	Genetics 32.
C. parallelus	17s	9♂(1)	X-0♂	Darlington '36	J.G. 33.
Chortippus pulvinatus	"	"	"	McClung '30	Acta Cong. Int. Biol. Montevideo 7.
Chortogonus sp.	19s	10♂(1) 9,10♂(11)	"	Ramachandra '37	J.M. 61.
Chortophaga viridifasciata	23♂m 24♀m	---	---	Carlson '38, '40	Genetics 23; J.M. 66.
"	19s 23s	12♂(1) 11,12♂(11)	X-0♂. X fused with 1 autosome. Number varies due to multiple chroms.	McClung '05, '14	B.B. 9; J.M. 25.
"	24♀ 24♀m 23♂m	12♀(1) 12♀(11) 12♂(1) 11,12♂(11)	X-0♂ X-X♀	McNabb '28	J.M. 25.
"	23s	---	---	White '40	J.G. 40.
"	23s	---	X-0♂; all atelomitic?	Coleman '43	Genetics 28.
Chromacris miles	"	12♂(1)	X-0♂	Saez '30,'30	Rev. Mus. Plata 32; Arch. Soc. Biol. Montevideo 2.
Chrysochraon dispar	17s	9♂(1)	"	Klingstedt '37	Mem. Soc. Fa. Fl. Fennica 12.
Chrysochraon japonicus	17s	8,9♂(11)	"	Shimakura, Fukuhara & Nakahara '49	Z.M.(Jap.) 58.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Circotettix coconino	---	11♂(1)	X-0♂. 8V's.	White '49	Genet. 34.
C. crotalum	21s	"	"	"	"
C. lobatus	21s	11♂(1) 10,11♂(11)	X-0♂. Super-numeraries occur.	Carothers '17	J.M. 28.
C. rabula	"	"	X-0♂. Super-numeraries occur.	"	"
C. rabula altior	"	11♂(1)	X-0♂. 8V's.	White '49	Genet. 34.
C. undulatus	"	"	X-0♂. 10V's.	"	"
C. verruculatus	21s 21♀m	11♂(1)	X-0♂	Carothers '21	J.M. 35.
"	21s	"	"	Helwig '33, '38	J.M. 55; A.B. 49.
"	---	11♀(1)	---	McNabb '28	J.M. 45.
"	---	---	Transl.& inversion occur X-rayed indiv.	Bishop '42	J.M. 71.
Clinocephalus sp.	23s	12♂(1) 11,12♂(11)	X-0♂	McClung '14	J.M. 25.
Colemania sphenerioides	19s	10♂(1) 9,10♂(11)	"	Ramachandra '37	J.M. 61.
Coptacra foedata	23s	12♂(1) 11,12♂(11)	"	Momma '43	J.F.S. Hokkaido I.U. 9.
Dactylotum sp.	23s	12♂(1) 11,12♂(11)	X-0♂	McClung '14	J.M. 25.
Diedronotus discoideus	"	"	"	Saez '30,'30	Rev. Mus. Plata 32; Arch. Soc. Biol. Montevideo 2.
Dissosteira carolina	"	"	"	Davis '08	Bull. Mus. Comp. Zool. Harvard 53.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Dissosteira sp.	23s	12♂(1) 11,12♂(11)	X-0♂	McClung '14	J.M. 25.
Eirenephilus longipennis	"	"	"	Momma '43	J.F.S. Hokkaido I.U. 9.
Elaeochlora viridicata	"	"	"	Saez '30, '30	Rev. Mus. Plata 32; Arch. Soc. Biol. Montevideo 2.
Encoptolophus sp.	"	"	"	McClung '14	J.M. 25.
Eremnus sp.	"	"	"	"	"
Euchorthippus pulvinatus	17s	---	---	Carlson '36	J.M. 59.
Gastrimarus transversus	23s	12♂(1) 11,12♂(11)	X-0♂	Momma '43	J.F.S. Hokkaido I.U. 9.
Gesonia punctifrons	"	"	"	"	"
Gomphocerus maculatus	17s, 17♂m 18♀m	9♂(1) 8,9♂(11)	"	Eisentraut '26	Z.W.Z. 128.
G. rufus	17s	---	---	Carlson '36	J.M. 59.
G. sibericus	"	9♂(1)	X-0♂	McClung '30	Acta Cong. Int. Biol. Montevideo 7.
Hadratettix sp.	23s	12♂(1) 11,12♂(11)	"	McClung '14	J.M 25.
Hesperotettix brevipennis	"	---	---	McClung '17	J.M. 29.
H. festivus	---	12♂(1)	---	"	"
H. pratensis	22s	12♂(1) 11♂(11)	X-0♂. X fused with 1 autosome.	McClung '05, '14, '17.	B.B. 9; J.M. 25, 29.
H. speciosus	"	"	"	"	"
H. viridis	22s	"	"	"	"
Hieroglyphus banian	23s	12♂(1) 11,12♂(11)	X-0♂	Asana, Makino & Niiyama '39	Jap. J.G. 15.
Hippiscus phoenicopterus	"	"	"	McClung '14	J.M. 25.

Species	Chromosome Number 2n	n	Remarks	Observer	References
H. tuberculatus	23s 24o	12♂(1) 11,12♂(11)	X-0♂	Davis '08	Bull. Mus. Comp. Zool. Harvard 53.
Leptysma dorsalis	---	"	"	Piza '45	Luiz de Queiroz 2.
Locusta danica (=migratoria)	23s (23-27)	"	X-0♂. 1-4 super-numeraries.	Itoh '34, '38	Jap. J. G. 10; Tran. Sapporo Nat. Hist. Soc. 15.
Locusta migratoria	"	---	X-0♂	Csik & Koller'39	Chrom. 1.
"	---	12♂(1)	"	Mather '40	J.G. 39.
"	23s	"	"	White '34	J.G. 29.
"	"	12♂(1) 11,12♂(11)	"	Wu '38	Cyt. 9.
Locustana pardalina	"	"	"	Malan & Malan '25	Trans. Roy. Soc. South Africa 13.
Mecostethus gracilis	---	12♂(1)	---	Carothers '31	B.B. 61.
"	23s	"	X-0♂	McClung '28	Z.Z.M.A. 7.
M. grossus	"	"	"	"	"
"	---	"	"	Morita '27,'41	B.B. Fr. Bel. 61; C.R.S.B. 96.
"	---	"	"	White '36	Z.Z.M.A. 24.
"	23s (Normal) 24=23+X (trisomic)	13♂(1)	X-0♂ trisomic indiv.	Callan '41	J.H. 32.
M. lineatus	23s	12♂(1)	X-0♂	McClung '28	Z.Z.M.A. 7.
Mecostethus sp.	"	12♂(1) 11,12♂(11)	"	McClung '14, '27	J.M. 25, 43.
Melanoplus angustipennis	"	11,12♂(11)	"	Meek '13	P.R.S. London B. 203.
M. atlanis	"	"	"	"	"
"	"	12♂(1) 11,12♂(11)	"	Nowlin '08	Kansas Univ. Sci. Bull. 4.
M. bivittatus	"	---	---	Meek '13	P.R.S. London B 203.

Species	Chromosome Number 2n	n	Remarks	Observer	References
M. bivittatus	23s	12♂(1) 11,12♂(11)	X-0♂	Nowlin '08	Kansas Univ. Sci. Bull. 4.
M. dawsonii	"	---	---	Meek '13	P.R.S. London B. 203
M. diferentialis	"	12♂(1) 11,12♂(11)	X-0♂	Nowlin '12	Kansas Univ. Sci. Bull. 6.
"	24♀m	12♀(1) 12♀(11)	Parth.	Slifer & King '34	J.M. 56.
Melanoplus femoratus	23s	12♂(1) 11,12♂(11)	X-0♂	Davis '08	Bull. Mus. Comp. Zool. Harvard 53.
M. femur-rubrum	"	"	"	Hearne & Huskins '31, '35	Cyt. 3,6.
"	23s 22?♀	"	"	Nowlin '12	Kansas Univ. Sci. Bull. 6.
"	23s	12♂(1)	"	White '40	J.G. 40.
M. femur-rubrum (=Caloptenus)	12s	6♂(1) =24el. 6♂(11) =12el.	---	Wilcox '94,'95, '98	A.Z. 10; Bull. Mus. Comp. Zool. Harvard 27; A.Z. 14.
"	---	---	Poly-ploid germ cells	Gremillion '42	Proc. Louisiana Acad. Sci. 7.
M. mexicanus	23s	---	X-0♂: all atelomitic?	Coleman '43	Genetics 28.
M. packardii	23s	11,12♂(11)	X-0♂	Meek '13	P.R.S. London B 203.
"	"	12♂(1) 11,12♂(11)	"	Nowlin '12	Kansas Univ. Sci. Bull. 6.
Melanoplus sp.	"	"	"	McClung '14	J.M. 25.
Mermiria bivittata	22s 22♀m	11♂(1) 11♂(11)	X-0♂. X fused with 1 autosome	McClung '17	J.M. 29.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Mermiria sp.	23s	12♂(1)	X-0♂	McClung '17	J.M. 29.
Mestobregma sp.	"	12♂(1) 11,12♂(11)	"	McClung '14	J.M. 25.
Miramella dairisama	21s	11♀(1) 10,11♂(11)	"	Momma '42,'43	Bot. & Zool. 10; J.F.S. Hokkaido I.U. 9.
M. mikado	"	"	"	"	"
Oedaleus abruptus	23s	12♀(1) 11,12♂(11)	"	Asana,Makino & Niiyama '39	Jap. J.G. 15.
O. coerulescens	"	"	"	Eisentraut '26	Z.W.Z. 128.
Oedipoda sp.	"	"	"	Buchner '09	A.Zf. 3.
Omocestus ventralis	17s	---	---	Carlson '36	J.M. 59.
O. viridulus	"	9♂(1)	---	McClung '30	Acta Cong. Int.Biol. Montevideo 7.
Orphulella punctata	23s	12♂(1) 11,12♂(11)	X-0♂	Saez '30	"
"	---	12♂(1) 11,12♂(11)	X-0♂	Piza '45	Luiz de Queiroz 2.
Orphulella sp.	23s	"	"	McClung '14	J.M. 25.
Orthacris ruficornis	19s	10♀(1) 9,10♂(11)	"	Ramachandra '37	J.M. 61.
Osmilia violacea	---	12♀(1) 11,12♂(1)	X-0♂	Piza '45	Luiz de Queiroz 2.
Oxya intricata	23s	12♂(1) 11,12♂(11)	"	Momma '43	J.F.S. Hokkaido I.U. 9.
O. japonica	---	12♂(1)	"	Kitao '29	Jour. Coll. Agri. Imp. Univ. Tokyo 10.
O. jezoensis	23s	12♂(1) 11,12♂(11)	"	Momma '43	J.F.S. Hokkaido I.U. 9.
O. universalis	23s	12♂(1) 11,12♂(11)	X-0♂	Momma '43	J.F.S. Hokkaido I.U. 9.
O. velox	"	"	"	Oka '28	Z.M.(Jap.)40.

Species	Chromosome Number 2n	n	Remarks	Observer	References
O. velox	23s	12♂(1) 11, 12♂(11)	X-0♂	Wu '38	Cyt. 9.
Oxya sp.	23s	12♂(1)	"	Ray-chandhuri & Dutt '47	Proc. Roy. Soc. Edinb. B. 62.
Oxyblevta sp.	23s	12♂(1) 11, 12♂(11)	"	Saez '30	Acta. Cong. Int. Biol. Montevideo 7.
Pamphagus marmoratus	19s 20♀m	10♂(1)	"	Granata '10	A.Zf. 5.
"	19s	---	"	Jorelli '40	Arch. Zool. Ital. 28
Paraleurus alliacens fastigatus	23s	12♂(1) 11,12♂(11)	"	Momma '43	J.F.S. Hokkaido I.U. 9.
Paratylotropidia brunneri	19s 20♀m	9♂(1) 9,10♂(11)	X-0♂. X fused with 1 autosome. Number variable due to multiple chroms.	King & Beams	J. M. 63.
Paroxya sp.	23s	12♂(1) 11,12♂(11)	X-0♂	McClung '14	J.M. 25.
Philocleon anomalus	12s	6♂(1,11)	X-0♂ Multiple chroms. occur	Helwig '41	J.M. 69.
Philbostroma sp.	23s	12♂(1) 11,12♂(11)	X-0♂	McClung '14	J.M. 25.
Phlaeoba formosana	"	"	"	Momma '43	J.F.S. Hokkaido I. U. 9.
P. infumata	"	"	X-0♂:4n and 6n cytes occur.	Momma '42, '43	Bot. & Zool. 10; J.F.S. Hokkaido I. U. 9.
Phlaeoba sp.	"	12♂(1)	X-0♂	Ray-chandhuri & Dutt '47.	Proc. Roy. Soc. Edinb. B. 62.
Phoetaliotes sp.	"	12♂(1) 11,12♂(11)	"	McClung '14	J.M. 25.
Phrynotettix magnus	"	"	"	Pinney '08	Kansas Univ. Sci. Bull. 4.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Phrynotettix magnus	---	12♂(1)	X-0♂: 4n and 6n cytes occur.	Wenrich '16	Bull. Mus. Comp. Zool. Harverd 60.
Phrynotettix sp.	23s	12♂(1) 11,12♂(11)	"	McClung '14	J.M. 25.
Podisma (=Miramella) mikado	21s	11♂(1)	X-0♂. 4n cytes occur.	Makino '36,'39	J.F.S. Hokkaido I.U. 5; Jap. J.G. 15.
P. sapporoense	23s	---	X-0♂	Makino '36	J.F.S. Hokkaido I.U. 5.
"	"	12♂(1) 11,12♂(11)	"	Natori '32	Trans. Sapporo Nat. Hist. Soc. 12.
"	"	"	"	Momma '42,'43	Bot. & Zool. 16; J.F.S. Hokkaido I. U. 9.
Poecilocerus pictus	19s	10♂(1) 9,10♂(11)	"	Asana & Makino '34	Jour. Univ. Bombay 2.
"	19s	"	"	Ramachandra '37	J.M. 61.
Proracorypha sp.	23s	12♂(1) 11,12♂(11)	"	McClung '14	J.M. 25.
Pseudopomala sp.	"	"	"	"	"
Pseudotrimerotropis coeruleipennis	"	---	---	King '23	J.M. 38.
P. cyaneipennis	21s	---	---	"	"
P. thallasica	23s	---	---	"	"
Psinidia sp.	23s	12♂(1) 11,12♂(11)	X-0♂	McClung '14	J.M. 25.
Pyrgomorpha bispinosa	19s	10♂(1) 9,10♂(11)	"	Ramachandra '37	J.M. 61.
Rhomaleum sp.	23s	12♂(1) 11,12♂(11)	"	McClung '14	J.M. 25.
Romalea microptera	"	"	X-0♂: Polyploid germ cells occur.	Mickey '42,'46 '47	Proc. Louisiana Acad. Sci. 6: A.N. 80: Proc. Louis. Acad. Sci. 10.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Romalea microptera	24o	12♀(1)	Partheno-genetic	Swann & Mickey '47	Proc. Louis. Acad. Sci. 10.
Scirtetica sp.	23s	12♂(1) 11,12♂(11)	X-0♂	McClung '14	J.M. 25.
Schistocerca alutacea	"	12♂(1)	---	Hartmann'13	B.B. 24.
S. americana	"	"	---	"	"
S. gregaria	"	12♂(11)	X-0♂	Csik & Koller '39	Chromosoma 1.
S. paranensis	"	12♂(1)	"	"	"
"	"	12♂(1) 11,12♂(11)	"	Saez '30,'30	Rev. Mus. Plata 32; Arch. Soc. Biol Montevideo 2.
Schistocerca sp.	"	"	"	McClung '14	J.M. 25.
Scyllina cyanipes	"	12♂(1)	"	Long '40	J.M. 67.
Spathosternum prasiniferum	"	12♂(1) 11,12♂(11)	"	Asana, Makino & Niiyama '39	Jap. J.G. 15.
"	"	12♂(1)	"	Ray-Chandhuri & Dutt '47	Proc. Roy. Soc. Edinb. B. 62.
Spharagemon sp.	"	12♂(1) 11,12♂(11)	"	McClung '14	J.M. 25.
Sphenarium mexicanum	17s	9♂(1)	"	McClung '30	Acta Cong. Int. Biol. Montevideo 7.
Stauroderus bicolor	17s	9♂(1)	X-0♂	Darlington'36	J.G. 33.
S. biguttulus	"	---	---	Carlson '36	J.M. 59.
S. mori	"	9♂(1)	X-0♂	McClung '30	Acta Cong. Int. Biol. Montevideo 7.
S. scalaris	17s 19s	9♂(1) 10♂(1)	X-0♂. Supernu-meraries occur.	Corey '33	J.M. 55.
Stauronotus macroccanus	23s	12♂(1) 11,12♂(11)	X-0♂	Artom '09	Biologica 2.
Stenobothrus bicolor	17s	9♂(1) 8,9♂(11)	X-0♂	Meek '13	P.R.S. London B 203.

Species	Chromosome Number 2n	n	Remarks	Observer	References
S. biguttulus	16-17s	9♂(1) 8,9♂(11)	X-0♂	Gérard '09,'14	Bull. Soc. Roy. Sci. Med. Nat. Bruxelles 67; A.B. 24.
S. curtipennis	17s	"	"	Davis '08	Bull. Mus. Camp. Zoo . Harvard 53.
"	"	"	"	Meek '12	Jour. Linnean Soc. 32.
S. lineatus	"	---	---	Carlson '36	J.M. 59.
S. parallelus	17s	9♂(1) 8,9♂(11)	X-0♂	Darlington & Meek '32	Cyt. 3.
"	"	9♂(1)	"	Janssens '24	L.C. 34.
"	"	8,9♂(11)	"	Meek '13	P.R.S. London. B 203
S. vagans	23s	---	X-0	Kowalski '25	L.C. 36.
S. viridulus	---	12-18♂(1) 6-8♂(11)	---	Carnoy '85	L.C. 1.
"	17s	9♂(1) 8,9♂(11)	X-0♂	Meek ' 11,'13	Jour. Linnean Soc. 32; P.R.S. London B 203
S.(Chortippus) sp.	21s	11♂(1) 10,11♂(11)	"	McClung '14	J.M. 25.
Stirapleura pallida	23s	12♂(1) 11,12♂(11)	"	Saez '30	Acta Cong. Int. Biol. Montevideo 7.
Syrbula acuticornis	20s	10♂(1) 10♂(11)	2X-0♂	Montogomery'05	Proc. Acad. Nat. Sci. Phila. 57.
"	23s	12♂(1) 11,12♂(11)	X-0♂	Robertson '16	J.M. 27.
S. admirabilis	"	"	"	Robertson '08	Kansas Univ. Sci. Bull. 4.
Syrbula sp.	"	"	"	McClung '14	J.M. 25.
Telmatettix aztecus	---	6,7♂(11)	---	Nebours '28	Genet. 13.
Teratodes monticolis	23s	12♂(1) 11,12♂(11)	X-0♂	Asana, Makino & Niiyama '39	Jap. J.G. 15.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Traulia ornata	23s	12♂(1) 11,12♂(11)	X-0♂	Momma '43	J.F.S. Hokkaido I.U. 9.
Trigonophymus elongata	---	"	"	Saez '30	Acta. Cong. Int. Biol. Montevideo 7.
Trimerotropis bilobata	23s	12♂(1)	X-0♂. All rod. unequal pair occurs.	White '49	Genet. 34.
T. citrina	23s	12♂(1) 11,12♂(11)	X-0♂	Carothers '31	B.B. 61.
"	"	12♂(1)	X-0♂. All rod.	White '49	Genet. 34.
T. cyaneipennis	21s	11♂(1)	X-0♂. 6V's.	"	"
T. fallax	23s 24m	12♂(1) 11,12♂(11)	X-0♂	Carothers '17	J.M. 28.
T. fontana	23s	"	X-0♂. All rod.	Coleman '48	Genet. 33.
T. gracilis sordida	"	"	X-0♂. Some V's occur.	"	"
T. latifasciata	"	"	X-0♂. All rod. 1 super-numerary occurs.	White '49	Genet. 34.
T. maritima	"	---	X-0♂. All rod.	"	"
T. pallidipennis	"	12♂(1)	X-0♂. 6V's.	Coleman '48	Genet. 33.
"	"	"	"	White '49	Genet. 34.
T. praeclara	"	"	X-0♂. All rod.	Coleman '48	Genet. 33.
T. suffusa	23s 24m	12♂(1) 11,12♂(11)	X-0♂	Carothers '17	J.M. 28.
"	---	12♂(1)	X-0♂. 8V's.	White '49	Genet. 34.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Trimerotropis suffusa	---	12♂(1)	X-0♂. Supernumeraries occur.	Wenrich '17	J.M. 29.
Trimerotropis sp.	23s	12♂(1) 11,12♂(11)	X-0♂	McClung '14	J.M. 25.
Trimerotropis sp. (=T. titusi)	"	"	X-0♂. All rod. A pair of unequal size occurs.	White '49	Genet. 34.
Tristria pulvinata	21s	11♂(1)	X-0♂	Dutt '48	Proc. Zool. Soc. Bengal 1.
Trixalis nasuta	23s (25s)	12♂(1) 11,12♂(11) 13,14,15♂(1) 11,12,13♂(11)	X-0♂. Number variable due to supernumeraries.	Minouchi '34	Z.Z.M.A. 20.
"	23s	12♂(1) 11,12♂(11)	X-0♂	Minouchi & Kishimoto'31	Z.M.(Jap.) 43.
Tropinotus discoideus	---	12♂(1) 11,12♂(11)	"	Piza '47	Luiz de Querioz 2.
Tropidolophus sp.	23s	"	"	McClung '14	J.M. 25.
Truxalis brevicornis	"	"	"	Saez '30	Acta Cong. Int. Biol. Montevideo 7.
Tryxalis nasuta	21s	11♂(1)	"	Brunelli '10, '11	Mem. Soc. Ital. Sci. 16; Mem. R. Acad. Lincei 8.
Tryxalis sp.	23s	12♂(1) 11,12♂(11)	"	McClung '14	J.M. 25.
Zarytes squalina	19s	10♂(1) 9,10♂(11)	"	Ramachandra '37	J.M. 61.
Zoniopoda tarsata	23s	12♂(1) 11,12♂(11)	"	Saez '30	Acta Cong. Int. Biol. Montevideo 7.
Zubovskya (Podisma) glacialis canadensis	21s	11♂(1)	X-0♂	Smith'44	Sci.Agric.24.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Blattidae					
Blabera fusca (Blaberidae)	73s	37♂(1) 36,37♂(11)	X-0♂	Suomalainen '46	Ann. Acad. Sci. Fenn. A. IV,10.
Blatta germanica	---	12♂(1)	---	Erlanger '96, '97	Z.A. 19; Z. Cbl. 4.
"	23s 24o	12♂(1) 11,12♂(11)	X-0♂	Wassilief '07	A.M.A. 70.
Blatta orientalis (Blattidae)	47s 48♀m	24♂(1) 23,24♂(11)	"	Suomalainen '46	Ann. Acad. Sci. Fenn. A. IV, 10.
Blatella (Blatta) germanica	23s 23♀m(?)	12♂(1) 11,12♂(11)	"	Stevens '05	Carnegie Inst. Pub. 36.
Leucophaea maderiae	23s 24o	11,12♂(11)	"	Morse '09	A.Zf. 3.
Loboptera decipiens (Phyllodromiidae)	33s	17♂(1) 16,17♂(11)	"	Suomalainen '46	Ann. Acad. Sci. Fenn. A. IV, 10.
Periplaneta americana	32s	16♂(1,11)	---	Farmer & Moore '04, Moore & Robinson '04, Moore & Arnold'05	Q.J.M.S. 48; P.R.S. London, 77.
"	33s 34o	17♂(1) 16,17♂(11)	X-0♂	Morse '09	A.Zf. 3.
"	---	17♂(1)	"	Hogben '20	P.R.S. London 91.
" (Phyllodromiidae)	33s 34♀m	17♂(1) 16,17♂(11)	"	Suomalainen '46	Ann. Acad. Sci. Fenn. A. IV, 10.
P. australasiae (")	27s 28♀m	14♂(1) 13,14♂(11)	"	"	"
Phyllodromia germanica (")	23s 24♀m	12♂(1) 11,12♂(11)	X-0♂: Association of X and an autosome occur.	"	"
Pycnoscelus surinamensis	37s 38o	19♂(1) 18,19♂(11)	X-0♂; Bisexual & parth. races occur.	Matthey '45,'48	R.Suisse Z.52; Jul. Klaus-Stift.Vererb.23.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Stylopyga orientalis	---	---	X-0♂	Morse '09	A.Zf. 3.
Gryllidae					
Acheta bimaculata	29s	---	"	Tateishi '32	Z.M.(Jap.) 44.
Acheta campestris	29s	---	X-0♂	Ohmachi '29, '35	P.I.A. (Tokyo) 5; Bull. Mie, 5*
" (Gryllus campes.)	29s	15♂(1) 14,15♂(11)	---	Buchner '09, '10	A.Zf. 3,5.
A.(Gryllus) mitratus -Manchuria-	25s	13♂(1) 12,13♂(11)	X-0♂	Honda '26; Honda & Iriki'32,'38	P.I.A.(Tokyo) 2; S.R. Tokyo B.D. 1; Ann. Zool. Jap. 17.
" -Tokyo-	27s	---	"	Ohmachi '27, '35	P.I.A. (Tokyo) 3; Bull. Mie, 5.
" -Tokyo & Kyoto-	"	14♂(1) 13,14♂(11)	"	Honda & Iriki'32,'38	S.R. Tokyo B.D. 1; Ann. Zool. Jap. 17.
" -Taiwan-	"	---	"	Tateishi '32	Z.M (Jap.) 44.
Anaxipha pallidula	19s	---	"	Ohmachi '27, '35	P.I.A.(Tokyo) 3; Bull. Mie 5.
Aphonomorphus japonicus	17s	---	"	Ohmachi '35	Z.M.(Jap.) 47.
Apithes agitator	13s	---	---	Baumgartner '17	A.R. 11.
Brachytrupes portentosus	13,14,15s	6,7,8♂(1) 6,7,8♂(11)	X-0♂. Number variable due to multiple chroms.	Tateishi'31, '32	J.Soc. Trop. Agr. Taihoku Imp. Univ. 3; Z.M.(Jap.) 44.
"	14,15,20s	---	"	Ohmachi '32, '35	P.I.A. (Tokyo)8; Bull. Mie, 5.
"	15,17s	---	"	Momma '42	Jap. J.G. 18.

*Bull. Mie. = Bulletin of the Mie Imperial College of Agriculture and Forestry.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Cyrtoxiphus ritsemae	15s	---	X-0. Supernumeraries occur.	Ohmachi '27, '35	P.I.A.(Toyko) 3; Bull. Mie, 5.
Eneoptera surinamensis	9s 8♀m	6♂(1) 4,5♂(11)	X-Y_1Y_2♂, X-X♀	Piza '46	Luiz de Queiroz 3.
Endecous cavernicola	19s	10♂(1) 9,10♂(11)	X-0♂	Piza '45	Luiz de Queiroz 2.
Euscyrtus formosanus	---	10♂(1) 9,10♂(11)	X-0♂	Momma '41	Jap. J.G. 17.
E. karymi	19s	"	"	"	"
Gryllodes berthellus	23s	---	---	Honda '26	P.I.A. (Tokyo) 2.
"	21s	---	X-0♂	Ohmachi '27, '35	P.I.A. (Tokyo) 8; Bull. Mie, 5.
G. sigillatus	21s	---	"	"	"
"	"	---	"	Tateishi '32	Z.M.(Jap.) 44.
Gryllodes sp.	19s	---	---	Honda '26	P.I.A. (Tokyo) 2.
Gryllodes sp.	21s	11♂(1) 10,11♂(11)	X-0♂	Piza '45	Luiz de Queiroz 2.
Gryllomorpha dalmatina	13s	---	X-0♂	Favrelle '36	Mém. Musée Roy. Hist. Nat. Belg. Ser. II,3.
Gryllus assimilis	29s	15♂(1) 14,15♂(11)	X-0♂	Piza '45	Luiz de Queiroz 2.
Gryllus assimilis lactuosus	29s	15♂(1) 14,15♂(11)	X-0♂	Baumgartner '04	B.B. 8.
Gryllus desertus	21s	11♂(1)	X-0♂	Brunelli '09	Mem. R. Acad. Lincoi, Ser. 5a,7.
G. domesticus	21s	11♂(1) 11,11♂(11)	"	Baumgartner '04	B.B.'8.
"	21s,♂m 22o,♀m	11♂(1)	"	Gutherz '07, '08,'09	A.M.A. 69; Zentr. Phys. 22; Sitz. Ges. Nat. Fr. Berlin ('09).
"	21s	11♂(1) 10,11♂(11)	"	Meek '13	Phil. Trans. Roy. Soc. London B 203

Species	Chromosome Number 2n	n	Remarks	Observer	References
G. minor	11s	---	X-0♂	Ohmachi '29, '35	P.I.A. (Tokyo) 5; Bull. Mie, 5.
Gryllus (Gryllulus) mitratus (Hokkaido)	25s	13♂(1) 12,13♂(11)	"	Momma '48	Oguma Comm. Vol. Cyt. Genet 1.
" (Niigata)	27s	14♂(1) 13,14♂(11)	"	"	"
G. nipponensis	19s	---	X-0♂	Ohmachi'29, '35	P.I.A.(Tokyo) 5; Bull. Mie, 5.
Gryllus sp.	21s	---	"	Ohmachi '35	Z.M.(Jap.) 47
Homoeogryllus japonicus	21s	---	X-0♂. Inter-sex occur.	Ohmachi'17, '35	P.I.A.(Tokyo) 3; Bull. Mie. 5.
"	21s 22o	---	X-0, X-X♀. Gynandro-morph.	Suzuki'34	P.I.A.(Tokyo) 10.
"	21s	---	X-0. Brown mutant due to X-ray.	Suzuki'37	Cyt. Fujii Jub.-Vol.
"	21s	11♂(1) 10,11♂(11)	X-0♂	Sinotô '44	Cyt. 13.
Lebinthus sp.	11s	---	X-0♂	Ohmachi '35	Z.M.(Jap.) 47.
Liphoplus annulipedus	14s	---	"	Tateishi '32	Z.M.(Jap.) 44.
L. kanetataki	19s	---	"	Ohmachi '27, '35	P.I.A.(Tokyo) 3; Bull. Mie, 5.
Loxoblemmus arietulus -Manchuria-	13,14,15s	7,8♂(1)	X-0♂. Number variable due to multiple chroms.	Honda '26	P.I.A.(Tokyo) 2.
" -Tokyo-	13s	---	X-0♂	Ohmachi '27	P.I.A.(Tokyo) 3.
"	13s (14-17)	---	X-0♂. Number varies by X-ray treatment.	Suzuki '32, '34	P.I.A.(Tokyo) 8, 10.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Loxoblemmus arietulus -Tokyo-	14,15s	---	F_1 of normal♀ X X-rayed ♂	Suzuki '33	P.I.A.(Tokyo)9.
L. frontalis	12o	---	Partheno-genetic ♀.	Ohmachi '29	P.I.A.(Tokyo)5.
L. taicoun(doenitzi)	11s	6♂(1)	X-O♂	Honda '26	P.I.A.(Tokyo)2.
"	"	---	"	Ohmachi '27, '35	P.I.A.(Tokyo)3; Bull. Mie, 5.
Madasumma hibinonis	15s	---	X-O♂	"	"
M. marmorata	11s	---	"	"	"
Nemobius csikii	17s	9♂(1)	X-O♂	Honda '26	P.I.A.(Tokyo)2.
Nemobius fasciatus	15s	---	X-O♂	Honda '26	P.I.A.(Tokyo)2.
"	"	---	"	Baumgartner'29	Z.Z.M.A. 9.
N. flavoantennalis	17s	---	"	Ohmachi'29,'35	P.I.A.(Tokyo)5; Bull. Mie, 5.
N. furumagiensis	19s	---	"	"	"
N. mikado	15s	---	"	Ohmachi'27,'35	P.I.A.(Tokyo)3; Bull. Mie, 5.
N. nigrofasciatus	17s	---	"	"	"
"	"	---	"	Tateishi '32	Z.M.(Jap.)44.
N. ohmachii	11s	---	"	Ohmachi'27, '35	P.I.A.(Tokyo)3; Bull. Mie, 5.
N. yezoensis	17s	---	"	"	"
Nemobius sylvesiris	"	---	"	Favrelle '36	Mém. Musée Roy. Hist. Nat. Belg. Ser. II, 3.
Nemobius sp.	"	---	"	Ohmachi '35	Z.M.(Jap.) 47.
Oecanthus longicauda	20s	---	X-Y♂	Ohmachi '27, '35	P.I.A.(Tokyo)3; Bull. Mie, 5.
"	"	10♂(1,11)	"	Makino '32	J.F.S. Hokkaido I.U.Ser. VI, 2.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Oe. nigricornis	19s	---	X-O♂	Johnson '31	Z.W.Z. 140.
Oe. indicus	"	10♂(1) 9,10♂(11)	X-O♂	Nakamura & Kitada '49; Kitada '49	Jap. J.G. 24; La Kromosomo 5-6.
Paralandrevus coriaceus	"	---	"	Ohmachi '32, '35	P.I.A.(Tokyo)8; Bull. Mie, 5.
P. coulonianus	"	---	"	Tateishi '32	Z.M.(Jap.)44.
Paratrigonidium bifasciatum	15s	---	"	Ohmachi '27, '35	P.I.A.(Tokyo)3; Bull. Mie, 5.
Scapsipedus mandibularis	17s	---	"	Ohmachi '27, '35	"
Scapsipedus sp.	21s	---	"	Ohmachi '44	Jap. J.G. 20.
Scleropterus coriaceus	15s	---	"	Ohmachi '35	Z.M.(Jap.) 47.
Trigonidium cicindeloides	11s	---	"	Ohmachi '32, '35	P.I.A. (Tokyo)8; Bull. Mie, 5.
Gryllacridae					
Eremus testaceus	17s	---	X-O♂	Ohmachi '35	Z.M.(Jap.) 47.
Gryllacris signifera	11s	---	"	Heberer '37	Z.I.A.V. 73.
Troglophilus sp.	20(?)o	---	---	Buchner '10	A.Zf. 5.
Grylloblattidae					
Galloisiana nipponensis	30s	---	X-Y♂	Nakamura '44, '46	Jap. J.G. 20: La Kromosomo 1.
Gryllotalpidae					
Gryllotalpa africana	23s	12♂(1)	X-O♂	Ohmachi '29, '35	P.I.A.(Tokyo)5; Bull. Mie, 5.
"	23s 24,25s 24o	12♂(1) 11,12♂(11)	X-O♂. 24 and 25 due to 1 and 2 supernumeraries.	Asana, Makino & Niiyama '38, '40	Jap. J.G. 14; J.F. S. Hokkaido I.U. Sep. VI, 7.
Gryllotalpa borealis	23s 24o	"	X-O♂	Payne '12,'16	A.Zf. 9; J.M. 28
"	23s	12♂(1)	"	Baumgartner '11,'12	Sci. 33, 35.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Gryllotalpa gryllotolpa (G. vulgaris)				Winiwarter '27,'37	A.B. 37; Cyt. Fujii Jub. -Vol.
'race septentrionale'	12s	6♂(1,11)	X-Y♂		
'race meridionale'	15s	8♂(1)	X-0♂		
'race roumaine'	14-17s	---	Number variable due to fragmentation.		
G. gryllotalpa (G. vulgaris)				Barigozzi '33	Z.Z.M.A. 18.
'Nord. Stamm'	12s	---	X-Y♂		
'Sud. Stamm'	15-16s	---	X-0♂		
G. vulgaris 'Freiburg'	12s	6♂(1)	---	Rom Rath '91, '92,'95	Ber. Nat. Ges. Freiburg 6; A. M.A. 40, 46.
"	"	"	X-Y♂	Payne '16	J.M. 28.
G. vulgaris 'Bucharest'	14-17s	7♂(1)	---	Voinov '12, '14,'16,'25	C.R.S.B. 72; A.Z. E.G. 54; C.R.S.B. 79; A.Z.E.G. 63.
G. vulgaris 'Italy'	17s	9♂(1)	X-0♂	Senna '11	Menit. Zool. Ital. 22.
G. vulgaris 'Naples'	15s	8♂(1)	---	Payne '16	J.M. 28.
G. vulgaris 'Roumania'	14s(15)	---	X-Y♂	Steopoe '39	A.Z.E.G. 80.
Locustidae (Tettigoniidae)					
Amblycorypha oblongifolia	33s	---	X-0♂	Pearson '27, '29	A.N. 61; J.M. 47.
A. rotundifolia	33s	17♂(1) 16,17♂(11)	"	"	"
Anabrus sp.	33s	"	---	McClung '02,'05 '14	Kansas Univ. Bull. 1; B.B. 9; J.M. 25.
Anaulacomera sp. 1.	31s	16♂(1) 15,16♂(11)	X-0♂	Piza '45	Luiz de Queiroz 2.
Anaulacomera sp. 2.	"	"	"	"	"
Callimenus pancini	25s 29s	---	X-0♂	Georgevitch'34	Bull. Acad. Sci. Math. Nat. 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Conocephalus chinensis	33s	17♂(1) 16,17♂(11)	"	Momma '41	Jap. J.G. 17.
Conocephalus nasutus	21s	---	X-0♂	Momma '41	Jap. J.G. 17.
Conocephalus sp.	33s	---	---	McClung '14	J.M. 25.
Conocephalus sp.	33s	17♂(1) 16,17♂(11)	X-0♂	Asana, Makino & Niiyama '38	J.F.S. Hokkaido I.U. Ser. VI, 6.
Conocephalus sp.	33s	17♂(1) 16,17♂(11)	"	Piza '45	Luiz de Queiroz 2.
Decticua albifrons	31s	16♂(1)	X-0♂	Winiwarter '31	A.B. 42.
D. verrucivorus (?)	23s	12♂(1) 11,12♂(11)	X-0♂	Vejdowsky '12	Böhm. Ges. Wiss. Prag.
"	31s	---	X-0♂	Mohr '19	A.M.A. 92.
D. verrucosus	31s	---	"	Buchner '09	A.Zf. 3.
Ducetia japonica	29s	15♂(1) 14,15♂(11)	X-0♂. From correction of 1941. Supernumeraries occur.	Hareyama '37, '39, '41	Z.M.(Jap.) 49, 51; J.S. Hirosima U. Ser. B, 9.
"	"	"	X-0♂	Asana, Makino & Niiyama '38	J.F.S. Hokkaido I.U. Ser. VI,6.
Elimaea securigera	27s	14♂(1) 13,14♂(11)	"	"	"
Elimaea sp.	29s	15♂(1) 14,15♂(11)	X-0. 1 supernumerary occur.	Momma '41	Jap. J.G. 17.
Ephippigera vitium	29s	15♂(1)	X-0♂	Matthey '47	Sci. Genetica 3.
Euconocephalus nasutus	21s	11♂(1) 11,12♂(1)	X-0♂. Supernumeraries occur.	Hareyama '37, '41	Z.M.(Jap.) 49; J.S. Hirosima Univ. Ser. B. 9.
Euconocephalus varius	21s	11♂(1)	X-0♂	Momma '41	Jap. J.G. 17.
Eugaster guyoni	29s	---	X-0♂	Favrelle '36	Mém. Musée Roy. Hist. Nat. Belg. Ser. II, 3.

Species	Chromosome Number 2n	n	Remarks	Observer	References
E. fernandezi	29s	---	X-0♂	Matthey '48	Rev. Suisse Z. 55.
E. spinulosus	"	---	"	"	"
Gampsocleis bürgeri	31s	16♂(1) 15,16♂(11)	X-0♂. Supernumeraries occur.	Hareyama '32, '39, '41	Z.M.(Jap.) 44, 51; J.S. Hirosima U.Ser. B,9.
Hexacentrus annulicornis	---	16♂(1) 15,16♂(11)	X-0♂	Asana, Makino & Niiyama '38	J.F.S. Hokkaido I.U. Ser. VI,6.
H. japonica jap.	31s	"	X-0♂. Supernumeraries occur.	Hareyama '41	J.S. Hirosima U. Ser. B,9.
H. j. hareyamai	33s	17♂(1) 16,17♂(11)	"	Hareyama '37, '39, '41	Z.M.(Jap.) 49, 51; J.S. Hirosima U. Ser. B,9.
H. mundus	31s	16♂(1) 15,16♂(11)	X-0♂	Asana, Makino & Niiyama '38	J.F.S. Hokkaido I.U. Ser. VI, 6.
Holochlora japonica	31s	---	"	Ohmachi '35	Z.M.(Jap.) 47.
"	"	16♂(1) 15,16♂(11)	X-0♂. Supernumeraries occur.	Hareyama '41	J.S. Hirosima U. Ser. B,9.
Holochlora sp.	"	"	X-0♂	Asana, Makino, & Niiyama '38	J.F.S. Hokkaido I.U.Ser. VI,6.
Homoeocoryphus jezoensis	---	10♂(1) 9,10♂(11)	"	Momma '41	Jap. J.G. 17.
H. lineosus	25s	13♂(1) 12,13♂(11)	X-0♂. Supernumeraries occur.	Hareyama '32, '41	Z.M.(Jap.) 44; J.S. Hirosima U.Ser. B,9.
"	"	---	X-0♂	Ohmachi '35	Z.M.(Jap.) 47.
H. nitidulus	21s	---	---	Torelli '40	Arch. Zool. Ital. 28.
Isotima japonica	27s	14♂(1) 13,14♂(11)	X-0♂. Supernumeraries occur.	Hareyama '37, '39, '41	Z.M.(Jap.) 49, 51; J.S. Hirosima U. Ser. B,9.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Jamaicana flava	35s	18♂(1) 17,18♂(11)	X-0♂. Supernumeraries occur.	Woolsey '15	B.B. 28.
J. subguttata	34s	"	X-0♂. Number reduced by formation of multiple chroms.	Woolsey '15	B.B. 28.
J. unicolor	33s	18♂(1)	"	"	"
Kuwayamaea sapporensis	27s	14♂(1) 13,14♂(11)	X-0♂. Supernumeraries occur.	Hareyama '37, '39,'41	Z.M.(Jap.) 49, 51; J.S. Hirosima U. Ser. B, 9.
Leptophyes punctatissima	31s 32o	---	X-0♂	Mohr '15	A.Zf. 14.
"	32♀m	---	Parth. ♀	Cappe De Baillon '39	C.R.A.S. 208.
Locusta(Tettigonia) viridissima	33s	17♂(1) 16,17♂(11)	X-0♂	Otte '06,'07	Z.A. 30; Z.Jb. 24.
"	29s 30●	15♂(1) 14,15♂(11)	X-0♂	Mohr '15,'16	A.Zf. 14; A.B. 29.
Meconema albicornis	31s	---	"	Ohmachi '43	Z.M.(Jap.) 55.
Mecopoda elongata	27s	14♂(1) 13,14♂(11)	"	Asana, Makino & Niiyama '38	J.F.S. Hokkaido I.U. Ser. VI, 6.
M. nipponensis	"	"	X-0♂. Supernumeraries occur.	Hareyama '32, '39,'41	Z.M.(Jap.) 44, 51; J.S. Hirosima U. Ser. B, 9.
Metrioptera bonneti	33s	17♂(1) 16,17♂(11)	"	Hareyama '39, '41	Z.M.(Jap.) 51; J.S. Hirosima U. Ser, B, 9.
M. brachyptera	31s	16♂(1)	X-0♂	White '36,'40	Z.Z.M.A. 24; J.H. 31.
M. japonica	"	16♂(1) 15,16♂(11)	X-0♂. Supernumeraries occur.	Hareyama '32, '39,'41	Z.M.(Jap.) 44, 51; J.S. Hirosima U. Ser. B, 9.

Species	Chromosome Number 2n	n	Remarks	Observer	References
M. japonica	31s	16♂(1)	X-0♂. Polyploid spermatogonia occur.	Kichijo '34.	Z.M.(Jap.) 46.
M. tesellata	"	"	X-0♂	Csik & Koller '39	Chrom. l.
Microcentrum sp.	33s	17♂(1) 16,17♂(11)	"	McClung '02	Kansas Univ. Sci. Bull. 1.
Odontura maraccana	27s	---	X-0♂	Matthey '48	R.Suisse Z.55.
Orchelimum concinnum	33s 34o	---	"	King '24	Sci. 60.
O. vulgare	"	---	"	"	"
Orchesticus sp.	33s	17♂(1) 16,17♂(11)	"	McClung '02, '14	Kansas Univ. Sci. Bull. 1; J.M. 25.
Phaneroptera falcata (nigroantennata)	27s	14♂(1) 13,14♂(11)	X-0♂. Supernumeraries occur.	Hareyama '37, '39, '41	Z.M.(Jap.) 49, 51; J.S. Hirosima U.Ser. B,9.
"	"	"	X-0♂	Momma '41	Jap. J.G. 17.
Ph. nakanoensis	25s	---	"	Ohmachi '43	Z.M.(Jap.) 55.
"	27s	14♂(1) 13,14♂(11)	X-0♂; Heteroploidy occurs.	Hareyama '48	Oguma Comm. Vol. Cyt. Genet. 1.
Polysarcus (Orphania) denticauda	31s	16♂(1) 15,16♂(11)	X-0♂	De Sinety '01	L.C. 19.
"	---	"	"	Heberer '37	Z.I.A.V. 73.
Posidippus citrifolius	25s	13♂(1) 12,13♂(11)	X-0♂	Piza '45	Luiz de Queiroz 2.
Saga cappadocica	31s	16♂(1) 15,16♂(11)	X-0♂	Matthey '50	Jul.Klaus-Stift. Vererb.25.
S. ephippigera	33s	---	X-0♂	Matthey '48	R.Suisse Z. 55.
S. gracilipes	31s	---	"	"	"
S. pedo	68♀m	---	Parthenogenesis	Matthey '41, '48	R.Suisse Z. 48; 55.
Sathrophyllia sp. (rugosa?)	35s	18♂(1) 17,18♂(11)	X-0♂	Asana, Makino & Niiyama '38	J.F.S. Hokkaido I.U. Ser. VI, 6.

Species	Chromosome Numbers 2n	n	Remark	Observer	References
Scudderia sp.	33s	17♂(1) 16,17♂(11)	X-0♂	McClung '02,'14	Kansas Univ. Sci. Bull. 1; J.M. 25.
Scudderia sp.	31s	16♂(1) 15,16♂(11)	"	Piza '45	Luiz de Queiroz 2.
Steiroxys trilineata	29s	15♂(1) 14,15♂(11)	"	Davis '08	Bull. Mus. Comp. Zool. Harvard, 53.
"	"	"	"	Meek '13	Phil. Trans. Roy. Soc. London B 203.
Steropleurus cockerelli	29s	---	X-0♂	Matthey '48	R. Suisse Z. 55.
Stilpnochlora marginella	31s	16♂(1) 15,16♂(1)	"	Piza '45	Luiz de Queiroz 2.
Tettigonia (Locusta) orientalis orientalis	33s	17♂(1) 16,17♂(11)	X-0♂. Supernumeraries occur.	Hareyama '32, '39,'41	Z.M.(Jap.) 44, 51; J.S. Hirosima U. Ser. B, 9.
T. orientalis ibuki	35s	18♂(1) 17,18♂(11)	"	Hareyama '32, '39, '41	"
"	"	---	X-0♂	Ohmachi '35	Z.M.(Jap.) 47.
T. orientalis subsp.?	"	18♂(1)	X-0♂. Supernumeraries occur.	Hareyama'41	J.S. Hirosima U. Ser. B, 9.
Typhophtera donovani	---	18♂(1) 17,18♂(11)	"	Asana '40	Proc. Indian Acad. Sci. B, 12.
Xiphidiopsis suzukii	31s	---	X-0♂	Ohmachi '43	Z.M.(Jap.) 55.
Xiphidion chinensis	33s	17♂(1) 16,17♂(11)	X-0♂. Supernumeraries occur.	Hareyama '39, '41	Z.M.(Jap.) 51; J.S. Hirosima U. Ser. B, 9.
X. gladiatum	"	---	"	Ohmachi & Sokame '35	Jap. J.G. 11.
"	33s	17♂(1) 16,17♂(11)	X-0♂. Supernumeraries occur.	Hareyama '39, '41	Z.M.(Jap.) 51; J.S. Hirosima U. Ser. B, 9.

Species	Chromosome Number 2n	n	Remarks	Observer	References
X. japonicum	33s	---	X-0♂	Ohmachi '39	Jap. J.G. 15.
X. longipennis	"	---	"	"	"
X. maculatum	21s	---	"	Ohmachi & Sokame '35	Jap. J.G. 11.
Xiphidion maculatum	21s	11♂(1) 10,11♂(11)	X-0♂. Supernumeraries occur.	Hareyama '39, '41	Z.M.(Jap.) 51; J.S. Hirosime U. Ser. B, 9.
X. melanum	33s	---	X-0♂	Ohmachi '39	Jap. J.G. 15.
"	33s	17♂(1) 16,17♂(11)	X-0♂. Supernumeraries occur.	Hareyama '32, '41	Z.M.(Jap.) 44; J.S. Hirosima U. Ser. B, 9.
Xiphidium fasciatum	33s	---	X-0♂	McClung '99, '08	Zool. Bull. 2; Kansas Univ. Sci. Bull. 4.
Xiphidium sp.	33s	17♂(1) 16,17♂(11)	"	McClung '99, '02, '08, '14	Zool. Bull. 2; Kansas Univ. Sci. Bull. 1,4; J.M. 25.
Mantidae					
Aethalochloa ashmoliana	29s	---	X-0♂	Oguma '46	La Kromosomo 1.
Angela guianensis	---	10♂(1)	X-0♂	Hughes-Schrader '43	B.B. 85.
Apteromantis bolivari	29s	15♂(1) 14,15♂(11)	X-0♂	Matthey '49	Jul.Klaus-Stift Vererb.24.
Brunneria borealis	28♀m	---	Partheno-genetic	White '48	Evolution 2.
Callimantis antillarum	17s	9♂(1) 8,9♂(11)	X-0♂	White '38	P.R.S. London B 125.
"	17s	---	X-0♂; 4n spermato-cytes occur.	Hughes-Schrader '43	J.M. 73.
Choeradodis rhombicollis	27s(?)	---	---	Williams '38	Trans. Am. Mio. Soc. 57.
"	31s	15♂(1) 15,16♂(11)	X_1X_2-Y♂	Hughes-Schrader '43	B.B. 85.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Creobroter laevicolis	27s	14♂(1)	X-0♂	Oguma '46	La Kromosomo 1.
Didymocorypha lanceolata	15s	8♂(1) 7,8♂(11)	"	"	"
Empusa pennicornis	28s	14♂(1)	X_1X_2-0♂	Erazi '40	Rev. Fac. Sci. Univ. Istanbul, B 5.
Gongylus gongylodes	27s	14♂(1)	X-0♂	Oguma '46	La Kromosomo 1.
Hierodula patellifera	27s	13♂(1) 13;14♂(11)	X_1X_2-Y♂	"	"
H. tenuidentata	"	"	"	Asana '34	Current Sci. 2.
H. venosa	"	"	"	Oguma '46	La Kromosomo 1.
H. ventralis	"	"	"	"	"
Humbertiella indica	39s	20♂(1) 19,20♂(11)	X-0♂	"	"
"	39s	20♂(1)	"	Hughes-Schrader '48	Chrom. 3.
Iris oratoria	25s	---	X-0♂	Matthey '49	Jul.Klaus-Stift. Vererb.24.
Liturgousa annulipes	23s	12♂(1) 11,12♂(11)	X-0♂	Hughes-Schrader '43	B.B. 85.
Mantis religiosa	14s	14♂(1) 7♂(11)	---	Giardina '97	Monit. Zool. Ital. 8.
"	27s	13♂(1) 13,14♂(11)	X_1X_2-Y♂	King '31	J.M. 52.
"	"	"	"	Erazi '40	Rev. Fac. Sci. Univ. Istanbul, B 5.
Paratenodera sinensis	27s	13♂(1) 13,14♂(11)	"	Hughes-Schrader '43	B.B. 85.
Schizocephalus bicornis	27s	14♂(1)	X-0♂	Oguma '46	La Kromosomo 1.
Stagmomantis carolina	27s	13♂(1) 13,14♂(11)	X_1X_2-Y♂	King '31	J.M. 52.
"	"	"	"	Hughes-Schrader '43	B.B. 85.
Statillia maculosa	"	"	"	Oguma '46	La Kromosomo 1.
Tenodera (Paratenodera) aridifolia	"	"	"	Oguma '21	J.Coll. Agr. Hokkaido Imp. Univ. 10.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Tenodera sinensis	27s	13♂(1) 13,14♂(11)	X_1X_2-Y♂	King '31	J.M. 52.
Tenodera superstitiosa	27s	13♂(1) 13,14♂(11)	"	Oguma '21	J. Coll. Agr. Hokkaido Imp. Univ. 10.
Toxomantis sinensis	27s	14♂(1)	X-O♂	Oguma '46	La Kromosomo 1.
Phasmidae					
Aplopus mayeri	35s 36o	18♂(1) 17,18♂(11)	X-O♂	Jordan '08a,b	A.A. 32; Carnegie Inst. Publ. 102.
Bacillus linearis	---	8-10♂(1)	---	Carnoy '85	L.C. 1.
Bacillus rossii	20o 20m	18-20♀(1) 20♀(11)	Parthenogenetic.	Von Baehr '07, '12	Z. Jb. 24; L.C. 27.
"	61-63s	---	X-O♂	Castelnuova '37	Arch. Zool. Ital. 24.
"	36♀m	---	Parthenogenetic	Cappe De Baillon, Favrelle et De Vichet '37	B.B. Fr. Bel. 71
Bacillus sp.	36♀m	---	"	"	"
Baculum artemis	72♀m (68-76)	---	"	Cappe De Baillon, Favrelle et De Vichet '34, '38	B.B. Fr. Bel. 68, 72.
Bostra sp.	35s	18♂(1) 17,18♂(11)	X-O♂	Hughes-Schrader '47a,b	Chrom. 3.
Carausius furcillatus	64, 67, 88♀m	---	Parthenogenetic	Cappe De Baillon, Favrelle et De Vichet '35, '38	B.B. Fr. Bel. 69, 72.
C. juvenilis	41s	20,21♂(11)	X-O♂. Parthenogenesis	Cappe De Baillon, Favrelle et De Vichet '38	B.B. Fr. Bel. 72.
C. (Grelnia) rotundatolobatus	21s 22♀m (Parth)	---	X-O♂, X-X♀	Cappe De Baillon, Favrelle et De Vichet '37	B.B. Fr. Bel. 71.
C. theiseni	40,42, 44♀m	---	Parthenogenetic	Cappe De Baillon, Favrelle et De Vichet '34	B.B. Fr. Bel. 68.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Carausius sp.	42s	---	X-O♂	Cappe De Baillon, Favrelle et De Vichet'38	B.B.Fr. Bel. 72.
Dixippus(Carausius) morosus	60o 62-64♀m	---	---	Pehani '25	Z.W.Z. 125.
Dubreulia lineata	26♀m	---	Parthenogenetic	Cappe De Baillon, Favrelle et De Vichet'38	B.B. Fr. Bel. 72.
Entria okinawaensis	35s	18♂(1) 17,18♂(11)	X-O♂	Niiyama '44	Jap. J.G. 20.
Isagoras subaquilus	27s	14♂(1) 13,14♂(11)	X-O♂	Hughes-Schrader '47 a,b	Chrom. 3.
Isagoras schraderi	34s	17♂(1,11)	X-Y♂	"	"
Isagoras sp.	47s	24♂(1) 23,24♂(11)	X-O♂	"	"
Leptynia attenuata	36s,36o	18♂(1) 18,19♂(11)	X-O♂; X fused with 1 autosome.	De Sinéty '01	L.C. 19.
Leptynia attenuata	36s,36o	18♂(1) 18,19♂(11)	X-O♂	Cappe De Baillon et De Vichet '40	B.B. Fr. Bel. 74.
Menexenus semiarmatus	45s 46♀m	22,23♂(11)	X-O♂ 22-23m occur in some parth. indiv.	Cappe De Baillon, Favrelle et De Vichet'35 De Sinety '01 L.C. 19.	B.B.Fr. Bel. 69.
Oncotophasma sp.	41s	21♂(1) 20, 21♂(11)	X-O♂	Hughes-Schrader'47 a,b	Chrom. 3.
Parasosilia parva	53s 54♀m	---	X-O♂. 53♂m and 56♀m occur in parth. indiv.	Cappe De Baillon, Favrelle et Vichet '37	B.B. Fr. Bel. 71.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Phalces longiscaphus	35s 36♀m	17,18♂(11)	X-0♂	Favrelle '35 Cappe De Baillon, Favrelle, et Vichet'38	L.C. 44; B.B. Fr. Bel. 72.
Phyllium bioculatum	33s	---	X-0♂	Favrelle '34	Press. Univ. France, Ser. A, No. 1472.
Phobaeticus sinetyi	51s 52♀m	---	X-0♂. 53♀m occurs in parth. indiv.	Cappe De Baillon, Favrelle et De Vichet'37	B.B.Fr. Bel. 71.
Pseudophasma menius	23s	12♀(1) 11,12♂(11)	X-0♂	Hughes-Schrader'47a,b	Chrom. 3.
Sipyloidea panaetius	21s 22♀m	---	Parthenogenetic	Cappe De Baillon, Favrelle et De Vichet '34,'38	B.B. Fr. Bel. 68, 72.
Schizodactylidae					
Schizodactylus monstrosus	14s	7♂(1,11)	X-Y♂	Asana '32; McClung & Asana '33	19th Indian Sci. Cong.(1932); J. M. 55.
Stenopelmatidae					
Ceuthophilus sp.	37s(?)	19or21♂(1)	X-0♂	Stevens '12	B.B. 22.
Ceuthophilus lactebricola	37-39s	---	"	Thompson '11	Ann. Rep. Michigan Acad. Sci. 13.
Diestrammena japonica	57s 58♀	29♂(1) 28,29♂(11)	X-0♂, X-X♀	Makino '31	Z.M.(Jap.) 43.
"	n,2n,4n (♀,♂ m)	---	Multipolar divs. & multinucleated cells occur in follicle epith. of testis & ovary.	Omura '50	Z.M.(Jap.) 59.
Diestrammena marmorata (=Tachycines asynamorus)	57s	29♂(1) 28,29♂(11)	X-0♂	Schellenberg '13	Z.Zf. 11.
Lutosa brasiliensis	15s	8♂(1)	"	Piza '47	Luiz de Queiroz 4.
Stenopelmatus sp.	47s	23,24♂(11)	"	Stevens'05,'09	Carnegie Inst. Publ. 36; J.E.Z. 6.
Tachycines asynamorus	57s	---	X-0♂, X-X♀	Mohr & Eker '34	Cyt. 5.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Tettigidae					
Acridium granulatus	13s,♂m 14♀m	7♂(1) 6,7♂(11)	X-0♂	Robertson'08, '15,'16,'31	Kansas Univ. Sci. Bull. 4; J.M. 26, 27, 51.
A. incurvatum	13m	7♂(1)	"	Robertson '16, '31	J.M. 27, 51.
A. linolea	---	10-16♂(1)	---	Carnoy '85	L.C. 1.
A. obscurum	13s	7♂(1)	X-0♂	Robertson'16, '31	J.M. 27, 51.
A. ornatum	---	"	"	"	"
Acrydium japonicum	13s	7♂(1) 6,7♂(11)	"	Misra '37	Jap. J.G. 13.
Apotettix eurycephalus	13s,♂m 14o,♂m	7♂(1)	"	Robertson '30	J.M. 50.
Nomotettix cristatus	13s	7♂(1) 6,7♂(11)	"	Robertson'17	Kansas Univ. Sci. Bull. 10.
Nomotettix sp.	"	---	"	Rayburn '17	"
Paratettix cucculatus	"	7♂(1)	"	Robertson'16	J.M. 27.
P. leuconotus-leucothorax	"	7♂(1) 7,7♂(11)	"	Harman '15	B.B. 24.
P. texanus	"	"	"	Robertson'16, '30,'31 a,b	J.M. 27, 50; Genet. 16; J.M. 51.
Paratettix sp.	13s 14o	7♂(1)	X-0♂	Robertson'08, '15	Kansas Univ. Sci. Bull. 4; J.M. 26.
"	13s	7♂(1) 6,7♂(11)	"	Harman '20	B.B. 38.
Tettigidea parvipennis	13s,♂m 14o	7♂(1) 6,7♂(11)	"	Robertson'08, '15,'16,'17,'31	Kansas Univ. Sci. Bull. 4; J.M. 26, 27; Kansas Univ. Bull. 10; J.M. 51.
Tridactylidae					
Tridactylus japonicus	13s	7♂(1)	X-0♂	Ohmachi'29, '35	P.I.A.(Tokyo) 5; Bull. Mie, 5.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Forficulidae					
Anisolabis annulipes	25s	12♂(1) 12,13♂(11)	X_1X_2-Y♂	Morgan'22,'28	Proc. Indiana Acad. Sci. 32; J.M. 46.
A. marginalis	"	"	"	Sugiyama '33	J.F.S. Tokyo I.U. Sec. IV, 3.
A. maritima	24s 24♀,♂	12♂(1,11)	X-Y♂, X-X♀	Randolf '08	B.B. 15.
"	25s 26♀	11♂(1) 12,13♂(11)	X_1X_2-Y♂	Kornhauser '21,'22	Denison Univ. Bull. 29; A.R. 23.
"	25s	12♂(1) 12,13♂(11)	"	Morgan '28	J.M. 46.
"	---	"	"	Schrader '41	J.M. 68.
Forficula auricularia	---	10-14♂(1)	---	Carnoy '85	L.C. 1.
"	---	12♂(1) 12-14♂(11)	---	St. George'87	Festschr. Kölliker
"	24s	12♂(1,11)	---	De Sinety '01	L.C. 19.
"	24,26s	12-14♂(1,11)	---	Zweiger'06a,b	Z.A. 30; Jena Z. 35.
"	24s	12♂(1,11)	X-Y♂	Stevens'10	J.E.Z. 8.
"	24s	12♂(1,11)	X-Y♂	Meek'13a,b, '15	Phil. Trans. R. Soc. London B 203; Q.J.M.S. 59,61.
Forficula auricularia(?)	24-27s	12-14♂(1) 11-14♂(11)	Variation of number due to irregular meiosis(?).	Payne '14	J.M. 25.
"	25s	12,13♂(1) 12,13♂(11)	X_1X_2-Y♂	Morgan '28	J.M. 46.
"	24s	12♂(1,11)	2X-Y♂. 2X's always in fusion.	"	"
"	24s 25s	---	X-Y♂ X_1X_2-Y♂	Callan '41	J.G. 61.

Species	Chromosome Number 2n	n	Remarks	Observer	References
F. scudderi	24s	12♂(1,11)	X-Y♂	Misra '37	Jap. J.G. 13.
Labia minor	14s 14o	7♂(1,11)	X-Y♂, X-X♀	Morgan '28	J.M. 46.
Labidura bidens	12s 12o	6♂(1,11)	"	"	"
L. riparia	---	6♂(1)	---	De Sinety '01	L.C. 19.
"	14s 14♀m	7♂(1,11)	X-Y♂, X-X♀	Asana & Makino '34	J.M. 56.

PLECOPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Chloroperlidae					
Isoperla grammatica	26s	12,14♂(11)	X_1X_2-0♂	Matthey & Aubert '43, '47	Arch. Jul. Klaus-Stift. Vererb. 18: B.B. Fr. Belg. 81.
I. rivulorum	---	13♂(1)	"	"	"
Perlidae					
Acroneuria jezoensis	25s 26♀m	13♂(11) 12,13♂(11)	X-0♂	Itoh '33	Cyt. 4.
Perla abdominalis	26s	---	X_1X_2-0♂	Matthey '47, Matthey & Aubert '43, '47	Rev. Suisse Z. 54. Arch. Jul. Klaus-Stift. Vererb. 18: B.B. Fr. Belg. 81.
P. baetica	26s	13♂(1) 12,14♂(11)	"	"	"
P. bipunctata	21s	11,10♂(11)	X-0♂	"	"
P. cephalotes	26s	13♂(1) 12,14♂(11)	X_1X_2-0♂	Matthey '46, '47, Matthey & Aubert '43, '47	Arch. Jul. Klaus-Stift. Vererb. 21. 22, 18: B.B. Fr. Belg. 81.
Perla immarginata	10s	5♂(1,11)	X-Y♂	Nakahara '19	J.M. 32.
P. maxima	19s	9,10♂(11)	X-0♂	Matthey '46, '47, Matthey & Aubert '43, '47	Arch. Jul. Klaus-Stift. Vererb. 21, 22,18:B.B.Fr.Belg.81

PLECOPTERA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
P. marginata	22s 24o 22♂m	12♂(1) 10,12♂(11)	X_1X_2-0♂;	Junker '23	A.Zf. 17.
"	22s	---	X_1X_2-0♂	Matthey & Aubert '47	B.B. Fr. Belg. 81.
Perlodidae					
Isogenus alpinus	---	13♂(1)	X_1X_2-0♂	Matthey '46, Matthey & Aubert '47	Experienta 2: B.B. Fr. Belg. 81.
I. imhoffi	45s	---	?	"	"
I. fontium	26s	13♂(1) 12,14♂(11)	X_1X_2-0♂	"	"
Perlodes intricata	33s	---	?	"	"
P. jurassica	31s	15♂(1) 14,17♂(11)	$X_1X_2X_3$-0♂	"	"
P. microcephola	27s	13♂(1) 12,15♂(11)	"	"	"

ISOPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Reticulitermes flavipes	---	21♂(1)	---	Benkert '30*	Proc. Penn. Acad. Sci. 4.
Termopsis angusticollis	52s	26♂(1,11)	---	Stevens '05	Carnegie Inst. Publ. 36.
Zootermopsis angusticollis	52♀m	---	---	Light '38	A.R. 72, No. 4. Suppl.
Z. nevadensis	52♀m	---	---	"	"

*Benkert, J.M. 1933: Comparison of the chromosomes of the soldier and the king of Reticulitermes flavipes Kollar. Proc. Penn. Acad. Sci. 7. (Not accessible).

EMBIOPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Oligotoma japonica	19s 20o	---	X-O♂	Kichijo '42a,b	Nagasaki Med. Jour. 20; Jap. J.G. 18.
O. saundersi	21s 22♀m	---	"	Hirai '48	Jap. J.G. 23.

PSOCOPTERA (Corrodentia)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Cerastipsocus venosus	17s	9♂(1) 8,9♂(11)	X-O♂	Boring '13	B.B. 24.

MALLOPHAGA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Goniodes slylifer	24o 12s	—	No reduction in ♂	Perrot '34	Q.J.M.S. 76.
Lipeurus baculus	12♀♂m	—	—	Ries '32	Z.Z.M.A. 16.

ANOPLURA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Haemotopinidae					
Hematopinus asini	9s	---	---	Cannon '22	Q.J.M.S. 66.
H. consobrinus	7s	---	—	"	"
Linognathus tenuirostris	14o,♀♂m	—	—	Ries '32	Z.Z.M.A. 16.
Pediculidae					
Pediculus capitis	12m	—	—	Doncastor & Cannon '20	Q.J.M.S. 64.
P. corporis	"	---	---	"	"
P. vestimenti	---	5♂(1)	X-Y♂	Foot '19	B.B. 37.

EPHEMEROPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ameletus costalis	18s 18o,♀m	9♂(1,11)	X-Y♂	Katayama '39a,b	Jap. J.G. 15; Z.M. (Jap.) 51.
"	18s	---	X-Y♂	Wolf '46	Z. Naturf. l.
Ephemera danica	11s	---	X-0♂	"	"

ODONATA*

Species	Chromosome Number 2n	n	Remarks	Observer	References
Anisoptera					
Aeschnidae					
Aeschna coerulea	25s 26o	13♂(1) 13♂(11)	X-0♂, post. reduct-ional.	Oksala '43	Ann. Acad. Sci. Fenn. A, IV, 4.
A. crenata	27s,28o	14♂(1) 14♂(11)	X-0♂, post reductional. 4n in tissue cells.	Oksala '39, '43	Hered. 25: Ann. Acad. Sci. Fenn. A, IV, 4.
A. cyanea	"	"	X-0♂, post-reduct-ional.	Oksala '43	Ann. Acad. Sci. Fenn. A, IV, 4.
A. grandis	"	14♂(1) 14♂(11) 13♀(1)	"	Oksala '43, '45	Ann. Acad. Sci. Fenn. A, IV, 4,9.
A. juncea	"	14♂(1) 14♂(11)	"	Oksala '43	Ann. Acad. Sci. Fenn. A, Iv, 4.
A. osiliensis fenica	27s,28o	14♂(1) 14♂(11)	X-0♂, post.-reduct.	Oksala '43	Ann. Acad. Sci. Fenn. A, IV, 4.
A. subarctica elisabethae	"	"	"	"	"
A. viridis	"	"	"	"	"

*In the Odonata the X divides equationally in the 1st division, and runs undivided to one pole in the 2nd division.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Anax junius	27s 28♀m	14♂(1,11)	X-0♂, post.-reduct.	McGill '04	Univ. Missouri Std. 2.
"	27s	---	---	Smith '16	B.B. 31.
"	"	14♂(1,11)	X-0♂ post.-reduct.	Lefevre & McGill '08	Am. J. Anat. 7.
Anotogaster sieboldii	---	13♂(1,11)	"	Oguma '30	J.F.S. Hokkaido I.U. Ser. VI, 1.
Cordulegaster annulatus	26♀m	13♂(1)	4n in tissue cells	Oksala '39	Hered. 25.
Gomphus hakiensis	---	12♂(1,11)	X-0♂, post-reduct.	Kichijo '39	Jap. J.G. 15.
G. melampns	---	10♂(1,11)	"	Oguma '30	J.F.S. Hokkaido I.U. Ser. VI, 1.
G. suzukii	---	12♂(1,11)	"	"	"
G. unifasciatus	---	11♂(1,11)	"	"	"
Ictinus rapax	23s	12♂(1,11)	"	Asana & Makino '35	J.F.S.Hokkaido I.U. Ser. VI,4.
"	"	12♂(1)	End-to-end assoc. occurs in chroms.	Omura '49	Jap.J.G.24.
Ophiogomphus serpentinus	---	12♀(1)	---	Oksala '45	Ann. Acad. Sci. Fenn. A, IV, 9.
Tachopteryx pryeri	17s	9♂(1,11)	X-0♂, post-reduct.	Kichijo '39	Jap. J.G. 15.
Libellulidae					
Brachythemis contaminata	25s	13♂(1,11)	"	Asana & Makino '35	J.F.S. Hokkaido I. U. Ser. VI, 4.
Crocothemis servilia	25s	13♂(1,11)	"	"	"
Diplacodes trivialis	"	"	"	"	"
Libellula angelina	---	"	"	Oguma '15, '30	Z.M. (Jap.) 27; J.F.S. Hokkaido I. U. Ser. VI, 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
L. basalis	25s	13♂(1,11)	X-0♂, post-reduct.	Smith '16	B.B. 31.
L. quadrimaculata	---	"	"	Oguma '15, '30	Z.M.(Jap.) 27; J.F.S. Hokkaido I.U. Ser. VI, 1.
Leucorrhinia dubia	---	13♀(11)	---	Oksala '45	Ann. Acad. Sci. Fenn. A, IV, 9.
L. pectoralis	---	13♀(1)	---	"	"
Orthetrum albistylum	25s	13♂(1,11)	X-0♂, post-reduct.	Oguma '17, '30	Nawa Mem. Vol. J.F. S. Hokkaido I.U. Ser. VI, 1.
O. japonicum	---	"	"	"	"
O. sabina	25s	"	"	Asana & Makino '35	J.F.S. Hokkaido I. U. Ser. VI, 4.
Pantala flavescens	25s	13♂(1,11)	X-0♂, post-reduct.	Asana & Makino '35	J.F.S. Hokkaido I.U. Ser. VI,4.
Potamarcha obscura	"	"	"	"	"
Somatochlora uchidai	---	"	"	Oguma '15, '30	Z.M.(Jap.) 27; J.F.S. Hokkaido I.U. Ser. VI,1.
S. viridinea	---	"	"	"	"
S. metallica	---	13♀(1)	---	Oksala '45	Ann. Acad. Sci. Fenn. A, IV, 9.
Sympetrum danae	---	13♂(1,11)	---	"	"
S. eroticum	---	11♂(1,11)	X-0♂, post-reduct.	Kichijo '42	Jap. J.G. 18.
S. frequense	---	12♂(1,11)	"	Oguma '17, '30	Nawa Mem. Vol.; J.F.S. Hokkaido I.U. Ser. VI, 1.
S. pedemontanum	25s	13♂(1,11)	"	"	"
S. semicinctum	"	"	"	Smith '16	B.B. 31.
Tramea chinensis	"	13♂(1)	"	Oguma & Asana '32	J.F.S. Hokkaido I.U. Ser. VI, 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
T. limbata	25s	13♂(1,11)	X-0♂, post-reduct.	Asana & Makino '35	J.F.S. Hokkaido I.U. Ser. VI, 4.
Trithemis aurora	"	13♂(1)	"	Oguma & Asana '32	J.F.S. Hokkaido I.U. Ser. VI, 1.
T. pallidinervis	"	13♂(1,11)	"	Asana & Makino '35	J.F.S. Hokkaido I.U. Ser. VI, 4.
Zygoptera					
Calopterygidae					
Caloptera atrata	---	13♂(1,11)	"	Oguma '30	J.F.S. Hokkaido I.U. Ser. VI, 1.
C. cornelia	---	"	"	"	"
C. splendens	---	13♀(1)	---	Oksala '45	Ann. Acad. Sci. Fenn. A, IV, 9.
C. virgo	---	8-14♂(1) 5-7♂(11)	---	Carnoy '85	L.C. 1.
"	---	13♂(1,11)	X-0♂, post-reduct.	Kichijo '42	Nagasaki Med. Jour. 20.
Mnais costalis	---	"	"	Oguma '30	J.F.S. Hokkaido I.U. Ser. VI, 1.
M. strigata	---	"	"	"	"
Coenagriidae					
Agriocnemis selenion	---	14♂(1,11)	"	Kichijo '41, '42	Nagasaki Med. Jour. 19; Jap. J.G. 18.
Agrion(Coenagrion) hieroglaphicum	---	"	"	"	"
Agrion(Coenagrion)sp.	---	"	"	"	"
Ceriagrion rubiae	27s	"	"	Asana & Makino '35	J.F.S. Hokkaido I.U. Ser. VI, 4.
Copera annulata	---	13♂(1,11)	"	Kichijo '41, '42	Nagasaki Med. Jour. 19; Jap. J.G. 18.

ODONATA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Enallagma cyathigerum	---	14♀(1)	---	Oksala '45	Ann. Acad. Sci. Fenn. A, IV, 9.
Ischnura elegans	---	"	---	"	"
I. senegalensis	---	14♂(1,11)	X-0♂ post-reduct.	Kichijo '41, '42	Nagasaki Med. Jour. 19; Jap. J.C. 18.
Nehalennia speciosa	---	14♀(1)	---	Oksala '45	Ann. Acad. Sci. Fenn. A, IV, 9.
Platycnemis pennipes	---	13♀(1)	---	"	"
Pyrrhosoma nymphula	---	14♀(1)	---	"	"
Lestidae					
Lestes sponsa	25s	13♂(1,11)	X-0♂, post-reduct.	Kichijo '41, '42	Nagasaki Med. Jour.19; Jap. J.G. 18.
Sympycna fusca	---	"	"	Oksala '45	Ann. Acad. Sci. Fenn. A, IV, 9.

THYSANOPTERA*

Species	Chromosome Number 2n	n	Remarks	Observer	References
Heliothrips haemorrhoidalis	---	16♀(1)	---	Pomeyrol '28	B.B. Fr. Bel. 62.

HOMOPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Aphidae					
Acandus itadori	---	6♂(1)	X-0♂	Shinji '31	J.M. 51.
Akkaio polygoni	---	"	"	"	"
Amphorophora magnoliae	---	"	"	"	"

*Radulesco, E.P. 1931: Recherches biologiques et cytologiques sur quelques Thysanopteres. Ann. Epiphyties, Paris 10: 103-188. (Not accessible).

Species	Chromosome Number 2n	n	Remarks	Observer	References
A. ribicola (Nectarosiphum)	---	6♂(1)	X-0♂	Shinji '31	J.M. 51.
Aphid, bearberry (Phyllaphis coweni)	5s 6o	3♂(1) 2,3♂(11)	X-0♂. 2X's in a cyst.	Morgan '15	J.E.Z. 19.
Aphid, beech(wooly)	---	8♂(1) 7,8♂(11)	X-0♂	Stevens '06, '09	Carnegie Inst. Publ. 51; J.E.Z. 6.
Aphid, birch(paper)	---	9♂(1)	---	Stevens '06	Carnegie Inst. Publ. 51.
Aphid, clover	---	8♂(1)	---	"	"
Aphid, goldenrod, beach	12m parth.	6♂(1) 5,6♂(11)	X-0♂	Stevens '06, '09	Carnegie Inst. Publ. 51; J.E.Z. 6.
Aphid, goldenrod, tall (solidago altessima)	---	"	"	"	"
Aphid, goumi	10m (Winter egg)	5♀(1)	5 in ♂ and ♀ pronucleus.	Stevens '06	Carnegie Inst. Publ. 51.
Aphid, maple	---	16♂(1) 15,16♂(11)	X-0♂	Stevens '06, '09	Carnegie Inst. Publ. 51; J.E.Z. 6.
Aphid, milkweed(black)	8s 8m (Parth)	4♂(1) 3,4♂(11)	X-0♂. 1 polar body in parth. egg.	Stevens '06, '09	Carnegie Inst. Publ. 51; J.E.Z. 6.
Aphid, milkweed (orange)	8m	7,8♀(1)	Parth.	"	"
Aphid, milkweed(pale)	---	7♂(1,11)	1 indiv. had 9 ♂ (1), different species?	Stevens '06	Carnegie Inst. Publ. 51.
Aphid, nasturtrium	---	4♂(1) 3,4♂(11)	May be black milkweed	Stevens '06, '09	Carnegie Inst. Publ. 51; J.E.Z. 6.
Aphid, oak, red I	---	7,♂(1,11)	---	Stevens '06	Carnegie Inst Publ. 51.
" red II	---	8♂(1)	---	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Aphid, oak, white	---	7♂(1)	---	Stevens '06	Carnegie Inst. Publ. 51.
Aphid, oenothera I(Aphis oenotherae)	10s,9♂m 10m parth.	5♂(1) 4,5♂(11) 5♀(1)	X-0♂, 9(1) in ♂ producing egg. 10 (1) in parth. egg.	Stevens '05a,b, '06,'09,'10	Carnegie Inst. Publ. 36; J.E.Z. 2; carnegie Inst. Publ. 51; J.E.Z. 6; B.B. 18.
Aphid, oenothera II	---	4♂(1,11)	8 in parth. egg.	Stevens '06	Carnegie Inst. Publ. 51.
Aphid, pea	8m	8♀(1)	Parth.	"	"
Aphis rosae	8+6m	14♀(1)	Chroms. unreduced.	Stschelkanovzew '04	B. Zbl. 24.
"	---	10♀(1,11)	"	Hewitt '06	Mem. Proc. Manchester Lit. Phil. Soc. 50.
" (brown)	10s 10m	5♂(1,11) 5♀(1,11) 10♀(1)	Chroms. unreduced in parth.♀.	Stevens '05, '06	J.E.Z. 2; Carnegie Inst. Publ. 51.
"	10m	10♀(1)	"	Von Baehr '09	A.Zf. 3.
Aphid, rose(green)	14m	7♂(1) 6,7♂(11) 14♀(1)	"	Stevens '06, '09	Carnegie Inst. Publ. 51; J.E.Z. 6.
Aphid, rose (migratory)	18m	9♀(1)	Winter egg.	Stevens '06	Carnegie Inst. Publ. 51.
Aphis saliceti	5s,♂m 6♀m 6♀m (Parth.)	3♂(1) 2,3♂(11) 6♀(1)	Chroms. unreduced in parth.egg.	Morgan '09	J.E.Z. 7.
A. saliceti (Harpswell willow)	5s 6m	"	X-0♂. Chroms. unreduced in Parth.egg.	Stevens '06, '09	Carnegie Inst. Publ. 51; J.E.Z. 6.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Aphid, star cucumber	---	5♂(1) 4,5♂(11)	X-0♂	Stevens '06, '09	Carnegie Inst. Publ. 51; J.E.Z. 6.
Aphid, willow(Saranac)	---	"	"	"	"
Aphid	13s,♂m 26m(4n)	13♀(1)	X-X♀	Suomalainen'37	Hered. 23.
Aphis sambuci	---	6♂(1)	X-0♂	Shinji '31	J.M. 51.
Calaphis betulaecolens	---	9♂(1)	"	"	"
C. magnolicolens	---	10♂(1)	"	"	"
Callipterns kuricola (nippocallis)	---	7♂(1)	X-0♂	Shinji '31	J.M. 51.
Carolinaia tade	---	5♂(1) 4,5♂(11)	"	"	"
Cavariella oenauthi (Hydronaphis)	---	4♂(1)	"	"	"
Chaitophorus sali-apterus	---	7♂(1)	"	"	"
Ch. sali-niger	---	7♂(1)	"	"	"
Ch. viminalis	---	10♂(1)	---	Morgan '09	J.E.Z. 7.
Chermes pectinata	20♀m	10♂(1,11) 10♀(1)	---	Frolowa '24	Z.Z.M.A. 1.
Ch. strobilobius	18-19♂m Ca22♀m	10-11♂(1,11)	22(1) in parth. egg, 20 (1) in ♂ producing egg.	"	"
Chromaphis magnoliae	---	4♂(1)	X-0♂	Shinji '31	J.M. 51.
Dilochnus laricis	---	5♂(1) 4,5♂(11)	"	"	"
D. pinidensiflorae	---	11♂(1) 10,11♂(11)	"	"	"
Drepanophis acerifolii	---	19♂(1)	XXX-0♂	Shinji '23,'31	Z.M. (Jap.) 35; J.M. 51.
Drepanosiphum platanoides	---	15♂(1) 8♂(11)	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Euceraphis betulae	8s,♂m 8o,♀m	8♂(1) 6♂(11) 8♀(1) 6♀(11)	XXXX-O♂	Shinji '23, '28, '31	Z.M.(Jap.) 35; Saito-Hoonkai 3; J.M. 51.
Eulachnus piniformosanus	—	7♂(1)	X-O♂	Shinji '31	J.M. 51.
Hyalopterus purni	9s 10♀m (Parth.)	5♂(1,11)	"	Shibata '41	Oyo-Dobutsugaku-Z. 13.
Macrosiphum cornifoliae	—	7♂(1)	"	Shinji '31	J.M. 51.
M. gobonis	—	7♂(1)	X-O♂	"	"
M. ibotum	—	"	"	"	"
M. pisi	7s 8♀m	4♂(1) 4♂(11) 4♀(1,11) 8♀(1)	X-O♂. No reduction in parth. eggs.	Suomalainen '33	Z.Z.M.A. 19.
M. solanifolii	9s,♂m 10♀m	5♂(1) 4,5♂(11) 10♀(1)	X-O♂. Chroms. unreduced in parth. egg.	Lawson '36	B.B. 70.
M. sonchi	—	6♂(1)	X-O♂	Shinji '31	J.M. 51.
Melanoxantherium salijaponica	—	4♂(1)	"	"	"
Melahoxanthus salicicola M. solicis	6s 6♀m 6o,♀m	6♂(1) 3♂(11) 6♀(1) 3♀(1,11)	No reduction in parth. egg.	Tannreuther '07	Z.Jb.(Anat.) 24.
Microtarsus pteridifoliae	—	6♂(1) 5,6♂(11)	X-O♂	Shinji '41	Oyo-Dobutsugaku-Z. 13.
Myzocallis castanae	—	7♂(1)	"	Shinji '23, '31	Z.M.(Jap.) 35; J.M. 51.
M. querei	—	9♂(1)	"	Shinji '23	Z.M.(Jap.) 35.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Myzus linderae	11s 12o	6♂(1) 5,6♂(11)	X-0♂	Shinji '41	Oyo-Dobutsugaku-Z. 13.
M. persicae	---	"	"	"	"
M. sansho	---	"	"	"	"
M. sugrui	---	6♂(1)	"	Shinji '31	J.M. 51.
M. ribis	---	8♂(1) 5♂(11)	XX-0♂	Shinji '23	Z.M.(Jap.) 35.
Nectarosiphum ribicola	8s 12o,♀m	8♂(1) 6♂(11)	XXXX-0♂	"	"
Neo-Calphis	6+3X	---	---	Shinji '28	Saito-Hoonkai 3.
Pemphigus pyriformis P. spirotheca	20♀m	20♀(1)	Chroms. unreduced in parth. egg.	Von Baehr '08, '09	Z.A. 33; A.Zf. 3.
Periphyllus aceris	---	10♂(1)	---	Shinji '31	J.M. 51.
P. koebreuteriae	---	"	---	"	"
Phyllaphis fagi	---	13♂(1)	X-0♂	"	"
Phylloxera caryaecaulis	5(=6)s 6(=8)o	3(=4)♂(1,11) 3(=4)♀(1,11) 6(=8)♀(1)	2X-0♂(?). 5(1) in parth. ♂ egg, 6(1) in parth. ♀ egg, chroms. unreduced in parth. egg.	Morgan '08, '09a,b,'12,'15	Proc. Soc. Exp. Biol. Med. 5; Sci. 29; J.E.Z. 7, 12, 19.
P. caryaefoliae	8♀m	---	Migrant	Morgan '09	J.E.Z. 7.
P. caryaeglobuli	22♂m 22♀m	---	---	Morgan '06,'09	B.B. 10; J.E.Z. 7.
P. depressa	6♀m	---	Stem mother	Morgan '09	J.E.Z. 7.
P. fallax	10s 10o,♀m	6♂(1) 4,6♂(11) 6♀(1,11)	2X-0♂(?). 12(1) in parth. ♀ egg, 10 (1) in parth. ♂ egg.	Morgan '06, '09a,b,'12, '15	B.B. 10; Sci. 29; J.E.Z. 7, 12, 19.

Species	Chromosome Number 2n	n	Remarks	Observer	References
P. globosum	6♀m 6♂m	---	---	Morgan '06, '09	B.B. 10; J.E.Z. 7.
P. subelliptica	6♀m	---	Migrant	Morgan '09	J.E.Z. 7.
Pterochlorus tropicalis	---	8♂(1) 8♂(11)	XXXX-0♂?	Shinji '31	J.M. 51.
Schizoneura subelliptica	12♀m	12♀(1)	Parth.	Von Baehr '08, '09	Z.A. 33; A.Zf. 3.
Sch. ulmi					
Shivaphis celti	---	3♂(1)	X-0♂	Shinji '31	J.M. 51.
Stomaphis yanois	---	10♂(1) 8,10♂(11)	2X-0♂(?)	Honda '21	B.B. 40.
Symydobius kabae	---	13♂(1)	---	Shinji '31	J.M. 51.
Tetraneura ulmi	13s 14o	13♂(1) 7♂(11)	X-0♂. NO reduction in parth. eggs. Eggs showing 13 chroms.(1) develops into ♂, those of 14(1) into ♀.	Hermann '32	Z.Z.M.A. 15.
Therioaphis shinai	---	7♂(1)	X-0♂	Shinji '31	J.M. 51.
Tuberculatus kashiwae	---	"	"	"	"
T. quercicola	---	"	"	"	"
Tuberolachnus viminalis	---	4♂(1,11)	---	"	"
Cercopidae					
Aphrophora coctalis	30s	15♂(1,11)	X-Y♂	Misra '37	J.F.S. Hokkaido I.U. Ser. VI, 5.
A. intermedia	"	"	"	"	"
A. parallela	---	15♂(1) 14,15♂(11)	X-0♂	Boring & Fogler'15	B.B. 29.

Species	Chromosome Number 2n	n	Remarks	Observer	References
A. quadrangularis =(Lepronia quad.)	21s	11,12♂(1) 10,11 or 11, 12♂(11)	X-0♂. 2 different species ?.	Boring '07, '13	J.E.Z. 4; B.B. 24.
A. quadriotata	---	14♂(1) 13,14♂(11)	X-0♂	Boring '07	J.E.Z. 4.
A. spumaria	---	6-12♂(1)	---	Carnoy '85	L.C. 1.
"	---	12♂(1)	X-0♂	Boring '13	B.B. 24.
Clastoptera obtusa	15s	8♂(1) 7,8♂(11)	"	Boring '07	J.E.Z. 4.
C. proteus	---	7♂(1)	"	Boring & Fogler'15	B.B. 29.
Philaenus lineatus	29s	15♂(1) 14,15♂(11)	"	Boring & Fogler'15	"
P. spumarius	23s,♂m 24o,♀m	12♂(1) 11,12♂(11)	"	Boring '13	B.B. 24.
Cicadidae					
Cicada septemdecim	19s 20o	10♂(1) 9,10♂(11)	X-0♂	Shaffer '20	B.B. 38.
C. tibicen	12s	6♂(1)	---	Wilcox '95	Bull. Mus. Comp. Zool. Harvard 27.
Coccidae					
Aleurodes proletella	13♂m 26-28♀m	13♀(1,11)	Partheno-genesis.	Thomsen '27	Z.Z.M.A. 5.
Aleurotus nephro-tepidis	---	13♀(1)	"	"	"
Aonidiella aurenti	8♀m	---	---.	Dickson '32	Hilgardia 13.
Aspidiotus hederae	"	---	Diploid parth-enogensis	Schrader '29	Psche, Cambr. 36.
Dactylopius sp.	10♀m 10♂s	---	---	Hughes-Schrader '48	Adv. in Genet. 2.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Crypticerya rosae) Echinicerya anomola) Icerya littralis) I. monotserratensis)	2s,♂m 4o,♀m	---	♂ develops from unfertilized (parth.)eggs. Chroms. unreduced in ♂, while reduced in ♀ by 2 meiotic divs.	Hughes-Schrader'30 a,b.	J.M. 50; Ann. Entom. Soc. Am. 23.
Icerya purchasi	4s 4o,m	2♂(1,11) 2♀(1,11)	---	Pierantoni '12, '14	Arctivio Zool. 5,7.
"	4s,o,m (In hermaphr.) 2s,m (In true ♂)	2♂(1) 2♀(1,11) (In Hermaphr.)	Fertilized eggs give rise to hermaphrodites. Males always haploid, develop from unfert. (parth.) eggs of hermaphr. chroms. reduced in ovary of hermaphr. by 2 meiotic divs.,while a single equational div. occurs in testes of both hermaphr. and true male. From correction of '26 and '27.	Hughes-Schrader'25, '26,'27; Hughes-Schrader & Schrader '26; Hughes-Schrader '48	Z.Z.M.A. 2; Sci. 63; Z.Z.M.A. 6. Z.W.Z. 128: Adv. in Genetics, Vol. 2.
I. similis	2s,♂m 4o,♀m	2♀(1)	♂ dev. from parth. eggs, haploid.	Hughes-Schrader'48	Adv. in Genet.2.
Gossyparia spuria	28s,♂m 28♀m	14+7♂(1) 14♀(1,11)	7 chroms. behave as a group in ♂ I-div.	Schrader '29	Z.W.Z. 134.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Lecanium hesperidum	14♂m 14♀m	14♀(1) (Parth. ♀ egg) 7♀(1,11) (Parth. bisexual egg)	Chroms. unreduced (1 meiot. div.) in parth. ♀ eggs, while 2 meiot. divs. and chroms. reduction occur in parth. bisexual eggs.	Thomsen '27	Z.Z.M.A. 5.
L. hemisphaericum	16s,♂m 16♀m	16♂(1,11) 16♀(1) (Parth. ♀ egg.) 8♀(1,11) (Parth. bisexual egg)	Chroms. reduced in II-div. into 8 (tid). a single meiot. div. in parth. ♀ eggs, and 2 meiot. divs. in parth. bisexual eggs.	"	"
"	16s 16♀m	16♂(1,11) 16♀(1) (Parth. ♀ egg.) 8♀(1,11) (Parth. bisexual egg)	"	Suomalainen '40	Ann. Acad. Sci. Fenn. Ser. A, 57.
L. corni	16♀	---	---	Thomsen '29	Trans. 4th Int. Congr. Ent. Ithaca.
L. coryli	18♀	---	---	"	"
Llaveia bouvari	5s,♂m 6o,♀m	3♂(1,11)	X-O♂, X undiv. to 1 pole in II.	Hughes-Schrader '31	Z.Z.M.A. 13.

Species	Chromosome Number 2n	n	Remarks	Observer	References
L. oaxacoensis	5s,♂m 6o,♀m	3♂(1,11)	X-o♂, X undiv. to 1 pole in II.	Hughes-Schrader'48	Adv. in Genet. 2.
Llaveiella taenechina	"	"	"	Hughes-Schrader '40	B.B. 78.
Marchalina hellenica	18♀	---	---	Hovasse'30	C.R. Acad. Sci. Paris 190.
Matsucoccus gallicola	34s 40♀m	14,20♂(11)	6X-o♂,6X undiv. to 1 pole in I.	Hughes-Schrader'48	Adv. in Genet. 2.
Nautococcus schraderae	5♂m 6♀m	3♂(1,11)	X undiv. to 1 pole in II. 1-2 supernumeraries.	Hughes-Schrader'42	J.M. 70.
Phenacoccus gossypii	12♀ 12♂	---	---	Hughes-Schrader '48	Adv. in Genet. 2.
Protortonia primitiva	5s 6♀m	3♂(1,11)	X-o♂, X undiv. to 1 pole in II.	Schrader '31	Z.W.Z. 138.
Pseudococcus acericola	12s 12o	12♂(1,11) 6♀(1,11)	In ♂ chroms. reduced in II div. showing 6 in tid.	Hughes-Schrader '35	B.B. 69.
P. citri P. maritimus P. nipae	10s,♂m 10o,♀m	10♂(1,11) 5♀(1,11)	5X-5Y♂? In ♂ Chroms. reduced in II div. showing 5 in tid.	Schrader '21, '23,'26	B.B. 70; A.Zf. 7; Sci. 63.
Puto sp.	13s 14♀m	7♂(1) 6,7♂(11)	X-o♂, X undiv. to 1 pole in I.	Hughes-Schrader '44	B.B. 87.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Steatococcus tuberculatus	2s 4♀m	---	♂ develops from unfert. (parth.) eggs.	Hughes-Schrader & Ris '41	J.E.Z. 87.
Trialeurodes vaporariorium	22o,♀m	11♀(1,11)	Parth.	Thomsen'27	Z.Z.M.A. 5.
Delphacidae					
Delphacodes striatellus	---	17♂(1) 17,16♂(11)	X-O♂	Hirai '48	Oguma Comm. Vol. Cyt. Genet.
Fulgoridae					
Amphiscepa bivittata	25s	13♂(1) 12,13♂(11)	X-O♂	Boring '07	J.E.Z. 4.
Poeciloptera bivittata	---	"	"	"	"
P. pruinosa) P. septentrionalis)	27s 28♀m	14♂(1) 13,14♂(11)	"	"	"
Jassidae					
Agallia sanguinolenta	---	11♂(1) 10,11♂(11)	X-O♂	Boring '07	J.E.Z. 4.
Chlorotettix unicolar) C. vividus)	21s	9,11♂(1) 8,9 & 10,11 ♂(11)	X-O♂. 2 different species?	"	"
Diedrocephala coccinea) D. mollipes)	23s	12♂(1) 11,12♂(11)	X-O♂	"	"
Phlepsius irroratus	15s	8♂(1) 7,8♂(11)	"	"	"
Membracidae					
Atymna castanea	---	11♂(1) 10,11♂(11)	X-O♂	Boring '07	J.E.Z. 4.
Camoylenchia curvata	19s	10♂(1) 9,10♂(11)	"	"	"
Ceresa bubalus) C. diceros) C. taurina)	---	11♂(1) 10,11♂(11)	"	"	"

HOMOPTERA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Enchenopa binotata	19s	10♂(1) 9,10♂(11)	X-0♂	Boring '07	J.E.Z. 4.
"	20s 20o	10♂(1,11)	X-Y♂	Kornhauser '14	A.Zf. 12.
E. curvata(Campylenchia curvata)	19s 20o	10♂(1) 9,10♂(11)	X-0♂	"	"
Entilia sinuata	21s	11♂(1) 10,11♂(11)	X-0♂	Boring '07	J.E.Z. 4.
Thelia bimaculata	21s 22o	11♂(1)	---	Kornhauser '14	A.Zf. 12.
Vanduzea arcuata	17s	9♂(1) 8,9♂(11)	X-0♂	Boring '07	J.E.Z. 4.

HETEROPTERA* ** ***

Species	Chromosome Number 2n	n	Remarks	Observer	References
Belostomatidae					
Belostoma flumineum	24s	13♂(1) 12♂(11)	X-Y♂	Chickering'27	J.M. 44.
Berracus griseus	28s	15♂(1) 14♂(11)	---	Chickering'27	J.M. 44.
Lethocerus americanus	8s	5♂(1) 4♂(11)	X-Y♂	Chickering '27 a,b, '32	J.M. 44; A.R. 37; Pap. Michigan Acad. Sci. 15.
"	"	---	---	Chickering & Bacorn '33	Pap. Michigan Acad. Sci. 17.
L. uhler	30s	---	---	"	"

*In the Heteroptera the sex chromosomes segregate post-reductionally in the 2nd division in the most cases.

**Cunha Marques, Alberto Xavier da. 1945: Cariologia comparada de alguns Hemipteros heteropteros (Pentatomideos e Coreideos). Mem. Estud. Mus. Zool. Univ. Coimbra 163; 1-10 (Not accessible).

***Ekblom, T. 1941. Chromosomenuntersuchungen bei Salda littoralis L., Callocoris chenopodii Fall., und Mesovelia furcata Muls, & Rey. etc. Chromosoma 2: 12-35. (Not accessible).

Species	Chromosomes Number 2n	n	Remarks	Observer	References
Lethocerus sp.	4s	---	Fusion of sex-elements with autosomes?	Chickering '27	A.R. 37.
Lethocerus sp.(south. Michigan & Ann Arbor)	"	---	"	Chickering'32	Pap. Michigan Acad. Sci. 15.
Lethocerus sp.(New Orleans)	28(30)s	16♂(1) 15♂(11)	---	"	"
Zaitha sp.(flumineum or aurantiacum)	24s	13♂(1) 12♂(11)	X-Y♂	Montgomery '01,'06	Trans. Am. Phil. Soc. 20, 21.
Capsidae (Miridae)					
Adelphocoris lineolatus	17s	8♂(1)	X-0♂	Schacow '32	A.A. 75.
Calocoris rapidus	30s	16♂(1) 15,16♂(11)	2X-0♂, 1 of X to 1 pole in I, other in II.(?)	Montgomery '01,'06	Trans. Am. Phil. Soc. 20, 21.
C. chenopodii	32s	---	X-Y♂	Ekblom '41	Chrom. 2.
Leptoterna dolabrata	---	17♂(1)	---	Montgomery '01	Trans. Am. Phil. Soc. 20.
Lygus innotatus	---	17♂(1) 16♂(11)	---	Geitler '39	Chrom. 1.
L. pratensis	Ca35s	19♂(1) 17,18♂(11)	---	Montgomery '01,'06	Trans. Am. Phil. Soc. 20, 21.
"	---	16-17♂(1)	X-0♂(?)	Schachow '32	A.A. 75.
"	---	17♂(1) 16♂(11)	---	Geitler '39	Chrom. 1.
Macrotylus quadrilineatus	---	"	---	"	"
Notostira erratuca	17s	8♂(1)	---	Schachow '32	A.A. 75.
Poecilocapsus goniphorus	---	18♂(1) 17♂(11)	X-Y♂	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21
P. lineatus	---	18♂(1)	---	Montgomery '01	Trans. Am. Phil. Soc. 20.
Cimicidae					
Cimex columbarius	29s 30(?)o	16♂(1)	---	Darlington '39	J.G. 39.

Species	Chromosome Number 2n		n		Remarks	Observer	References
C. lectularius	30)		18)		4X...7X-Y♂	Darlington '39	J.G. 39.
	(31))		19)	♂(1)			
	(32))	s	20)				
	33)		21)				
	34)						
	33)						
	36)						
	37)	o	---				
	39)						
	40)						
	41)						
C. columb. x C. lectul.	29s		16♂(1)		2X-Y♂	"	"
	34o						
C. lectul. x C. columb.	---		16♂(1)		2X-Y,	"	"
			21♂(1)		7X-Y,♂		
C. rotundatus	---		17♂(1)		2X-Y♂	"	"
"	---		16♂(1)		X-Y♂	Slack '39	Chrom. 1.
C. stadleri	31s		---		---	Darlington '39	J.G. 39.
Coreidae							
Acanthocoris sordidus	---		13♂(1)		XX-0♂. Some supernumeraries occur?	Toshioka '35	Bot. & Zool.(Tokyo), 3.
"	24s		12♂(1,11)		XX-0♂. 1-3 nucleoli.	Yosida '44, '46, '47	Igaku & Seibutsugaku 5; La Kromosomo 2-3; J.F.S. Hokkaido Univ.Ser.VI,9.
Alydus calcaratus	13s		7♂(1)		X-0♂	Reuter '30	Acta. Zool. Fenn. 9.
A. eurinus	"		7♂(1,11)		"	Montgomery '01,'04,'06	Trans. Am. Phil. Soc. 20; B.B. 6; Trans. Am. Phil. Soc. 21.
A. pilosulus	"		"		"	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
"	13s		"		"	Wilson '05	J.E.Z. 2.
	14o						

Species	Chromosome Number 2n	n	Remarks	Observer	References
Anacanthocoris concoloratus	21s	11♂(1,11)	---	Toshioka'34	Oyo-Dobutsugaku-Z. 6.
Anasa armigera	"	11♂(1)	X-0♂	Montogomery '01,'06	Trans. Am. Phil. Soc. 20, 21.
"	22o	---	X-X♀	Wilson '09	J.E.Z. 6.
A. tristis	22s	11♂(1,11)	---	Paulmier'98, '99	A.A. 14; J.M. 15.
"	21s 22o	"	X-0♂	Montgomery '01,'04,'06	Trans. Am. Phil. Soc. 20; B.B. 6; Trans. Am. Phil. Soc. 21.
"	"	"	X-0♂	Wilson '05, '06,'07,'11	J.E.Z. 2,3; Sci. 25; J.M. 22.
"	22s	"	---	Foot & Strobell'07a,b	B.B. 12; A.J.A. 7.
"	21s	10,11♂ (tid)	---	Lefevre & McGill '08	A.J.A. 7.
"	21s,♂m 22o,♀m	11♂(1,11)	X-0♂, X-X♀	Morrill '10	B.B. 19.
"	21s 22o	"	---	McClung & Pinney '10	Kansas Univ. Sci. Pull. 5.
"	21,22♂,♀m 21s,22o	---	---	Hoy '14,'16	B.B. 27, 31.
Anasa sp.	21s 22o	11♂(1)	---	Montgomery '01,'04,'06	Trans. Am. Phil. Soc. 20; B.B. 6; Trans. Am. Phil. Soc. 21.
Anasa sp.	21s	11♂(1,11)	X-0♂	Piza '46	Luiz de Queiroz 3.
Anisocelis faliacea	27s	14♂(1,11)	"	Piza '45	Luiz de Queiroz 2.
Archimerus alternatus (calcaraior?)	15s,♂m 16o,♀m	8♂(1) 7,8♂(11)	X-0♂, X-X♀. X undiv. to pole in I.	Morrill '10	B.B. 19.
A. alternatus	15s	8♂(1)	---	Wilson '32	J.M. 53.

Species	Chromosome Number 2n	n	Remarks	Observer	References
A. calcarator	15s 16o	8♂(1) 7,8♂(11)	X-0♂. X undiv. to pole in I.	Wilson '05, '09	J.E.Z. 2,6.
Camptopus lateralis	13s	8♂(1)	X-0♂	Schachow '32	A.A. 75.
Catorintha sp.	25s	---	"	Wilson '07	Sci. 25.
Centrocoris spinger	22s	12♂(1)	X-0♂	Schachow '32	A.A. 75.
Chariesterus antennator	---	13♂(1,11)	"	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
Ch. antennator (?)	21s	---	---	Wilson '05	J.E.Z. 2.
Ch. antennator	25s 26o	---	X-0♂, X-X♀	Wilson '09	J.E.Z. 6.
Chelinidea vittigera	21s	---	X-0♂	Wilson '07	Sci. 25.
"	21s,♂m 22o,♀m	---	X-0♂, X-X♀	Morrill '10	B.B. 19.
"	---	11?♂(1)	---	Bowen '22	B.B. 43.
Chorosoma schillingi	---	5,6♂(11)	---	Meijere '30	Z.A. 88.
Cletus hoplomachus	18s	9♂(1)	2X-0♂	Toshioka '35	Z.M.(Jap.) 47.
C. rusticus	"	"	"	"	"
C. trigonus	"	"	"	"	"
Coriomeris denticulatus	22s	12♂(1)	X-0♂	Schachow '32	A.A. 75.
Coriscus calcaratus	13s	8♂(1)	"	"	"
Corizus alternatus	"	7♂(1,11)	"	Montgomery '01, '04, '06	Proc. Acad. Nat. Sci. Phil. 53; B.B. 6; Trans. Am. Phil. Soc. 21.
C. hyosciami	"	8♂(1)	X-0♂	Schachow '32	A.A. 75.
C. lateralis	---	7♂(1,11)	"	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
Corizus sp.	13s	7♂(1,11)	"	Yosida '49, '50	Abstr. Sci. Res. 2; Iden-Sogo-Kenkyu 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Corynocoris distinctus	25s 26o	---	X-0♂, X-X♀	Wilson '09	J.E.Z. 6.
Diactor bilineatus	21s	11♂(1,11)	X-0♂	Piza '45	Luiz de Queiroz 2.
Euthoctha galeator	21s 22o	---	"	Wilson '07, '09	Sci. 25; J.E.Z. 6.
Gonocerus acuteangulatus	20s	10♂(1)	X-0♂	Schachow '32	A.A. 75.
Harmostes reflexulus	13s 14o	---	X-0♂, X-X♀	Wilson '06	J.E.Z. 3.
Holopterma alata	20s	10♂(1)	---	Stark '29	Trans. Roy. Soc. S. Africa, '17.
Homoeocerus dilatus	21s	12♂(1) 11♂(11)	X-0♂	Toshioka '34	Z.M.(Jap.) 46.
H. unipunctatus	19s	10♂(1,11)	"	"	"
Leptoglossus phyllopus	21s 22o	11♂(1)	"	Wilson '07, '09, '11	Sci. 25; J.E.Z. 6; J.M. 22.
L. gonagra	21s	11♂(1,11)	"	Piza '45	Luiz de Queiroz 2.
L. stigma	"	"	"	Piza '46	Luiz de Queiroz 3.
Maccevettus lineola	13s	8♂(1)	"	Schachow '32	A.A. 75.
Margus inconspicuus	23s 24o	---	X-0♂, X-X♀	Wilson '07, '09	Sci. 25; J.E.Z. 6.
Mesocerus marginatus	22s	12♂(1)	X-0♂	Schachow '32	A.A. 75.
M. marg. crientalis	"	11♂(1,11)	XX-0♂	Yosida '44	Igaku & Seibutsugaku, 5; La Kromosomo 2-3.
Metapodius femoratus	22s	11♂(1) 11,12♂(11)	X-0♂		
	22s 22o	12♂(1) 11♂(11)	X-Y♂	Wilson '07,'09, '10	B.B. 12; J.E.Z. 6,9.
	23s 23o	13♂(1) 11,12♂(11)	X-Y♂. 1 Supernumerary.		
	24s 24o	14♂(1) 11,12♂(11)	X-Y♂. 2 Supernumeraries.		

Species	Chromosome Number 2n	n	Remarks	Observer	References
	26s 26o	16♂(1) 11-15♂(11)	X-Y♂. 4 Supernumeraries.		
	28o	---	6 supernumeraries occur.		
M. granulosus	22s 22o	12♂(1) 11♂(11)	X-Y♂; X disjoins from Y in I-div.		
	23s 23o	13♂(1) 11,12♂(11)	X-Y♂. 1 Supernumerary.	Wilson '07, '09	B.B. 12; J.E.Z. 6.
	24s 24o	14♂(1) 11,12♂(11)	X-Y♂. 2 Supernumeraries.		
M. granulosus	25s 25o	15♂(1) 11♂(11)	X-Y♂. 3 Supernumeraries.	Wilson '07, '09	B.B. 12; J.E.Z. 6.
	26s 26o	16♂(1) 11-15♂(11)	X-Y♂. 4 Supernumeraries.		
M. trenunalis	21s	11♂(1) 10,11♂(11)	X-0♂	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
"	"	11♂(1,11)	"		
	22s 22o	12♂(1) 11♂(11)	X-Y♂	Wilson '07, '09	B.B. 12; J.E.Z. 6.
	23s 23o	13♂(1) 11,12♂(11)	X-Y♂. 1 Supernumerary.		
	24s 24o	14♂(1) 11,12♂(11)	X-Y♂. 2 Supernumeraries.		
	25s 25o	15♂(1) 11♂(11)	X-Y♂. 3 Supernumeraries.		
	26s 26o	16♂(1) 11-15♂(11)	X-Y♂. 4 Supernumeraries.		

Species	Chromosome Number 2n	n	Remarks	Observer	References
Myrmus mirifcrmis	13s	7♂(1,11)	---	Meijere '30	Z.A. 88.
"	13s 14o	---	X-0♂, X-X♀	Ekblom '34	Z.Z.M.A. 21, 24.
Narnia sp.	21s	---	---	Wilson '07	Sci. 25.
Pachycephalus sp.	22s	11♂(1,11)	2X-0♂	Yosida '49, '50	Abstr. Sci. Res. 2; Iden-Sogo-Kenkyu 1.
Pachylis gigas	15s 16o	8♂(1)	X-0♂, X-X♀	Wilson '07, '09, '11	Sci. 25; J.E.Z. 6; J.M. 22.
"	---	"	---	Schrader '32	Z.W.Z. 142.
P. laticornis	15s	8♂(1) 7,8♂(11)	X-0♂	Piza '46	Luiz de Queiroz 3.
P. pharaonis	17s	9♂(1)	"	"	"
Phthia picta	21s	11♂(1,11)	"	Piza '45	Luiz de Queiroz 2.
Protenor belfragei	13s	7♂(1,11)	X-0♂	Montgomery '01, '04, '06	Trans. Am. Phil. Soc. 20; B.B. 6; Trans. Am. Phil. Soc. 21.
"	13s 14o	"	"	Wilson '05, '06, '11	J.E.Z. 2,3; J.M. 22.
"	13s,♂m 14o,♀m	7♀(1)	X-0♂, X-X♀	Morrill '10	B.B. 19.
"	---	7♂(1)	---	Schrader '35	Cyt. 6.
Rhopalus parumpunctatus	13s	8♂(1)	X-0♂	Schachow '32	A.A. 75.
Riptorutus clavatus	"	7♂(1)	"	Yosida '44, '46	Igaku & Seibutsugaku, 5; La Kromosomo 2-3.
Syromastes marginatus	22s 22♀m	11♂(1) 10♂(11)	2X-0♂	Gross '04 a, b, '12	Verh. Deuts. Zool. Ges. 9; Z. Jb. 20,32.
"	22s 24o	11♂(1) 10♂(11)	2X-0♂	Wilson '09a,b	J.E.Z. 6; B.B. 16.
"	21s	---	X-0♂	Geitler '39	Chrom. 1.
S. rhombeus quadratus	22s	12♂(1)	"	Schachow '32	A.A. 75.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Corixidae					
Callicorixa caledonica	24s	---	X-Y♂	Slack '38	Proc. Roy. Soc. Edimb. 58.
C. conciuna	"	---	"	"	"
C. praeusta	---	13♂(1) 12♂(11)	"	Prokofieva '33	Z.Z.M.A. 19.
"	24s	---	"	Slack '38	Proc. Roy. Soc. Edimb. 58.
C. wollastoni	---	13♂(1)	"	Prokofieva'33	Z.Z.M.A. 19.
"	24s	---	"	Slack '38	Proc. Roy. Soc. Edimb. 58.
Corixa (Macrocorixa) dentipes	"	---	"	Slack '38	"
"	"	13♂(1) 12♂(11)	---	Prokofieva'33	Z.Z.M.A. 19.
C. distincta	"	"	---	Prokofieva'31	Russ. Arch. Anat. 10.
C.(Sigara) distincta	"	"	---	Prokofieva'33	Z.Z.M.A. 19.
C. fabrici	22(24?)s	13♂(1)	X-Y♂	"	"
C. falleni	---	13♂(1) 12♂(11)	"	"	"
C. fossarum	---	"	"	"	"
C. linnei	24s	"	"	"	"
C. punctata	---	13♂(1)	---	Poisson '36	A.Z.E.G. 78.
"	24s	---	X-Y♂	Slack '38	Proc. Roy. Soc. Edimb. 58.
C. sahlbergi	---	13♂(1)	"	Prokofieva '33	Z.Z.M.A. 19.
C. semistriata	---	13♂(1) 12♂(11)	X-Y♂	Prokofieva'33	Z.Z.M.A. 19.
C. striata	---	"	"	"	"
C. verticalis	---	12♂(1)	---	Montgomery'01	Proc. Acad. Nat. Sci. 53.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Cymatia bonsdorffi	26s	---	X-Y♂	Slack '38	Proc. Roy. Soc. Edimb. 58.
Glaenocorisa cavifrons	24s	---	"	"	"
Megalotomus pallescens	---	8♂(1,11)	X-0♂	Piza '46	Luiz de Queiroz 3.
Sigara(Callicorixa) carinata	---	12♂(1,11)	X-Y♂. X dis-joins from Y in I-div.	Geitler '33	Chrom. 1.
"	24s	---	X-Y♂	Slack '38	Proc. Roy. Soc. Edimb. 58.
S. castanea	"	---	"	"	"
S. distincta	"	---	"	"	"
S. fabricii	24s	---	X-Y♂	Slack '38	Proc. Roy. Soc. Edimb. 58.
S. fassarum	"	---	"	"	"
S. fallenii	"	---	"	"	"
S. germari	"	---	"	"	"
S. linnaei	"	---	"	"	"
S. scotti	"	---	"	"	"
S. semistriata	"	---	"	"	"
S. striata	"	---	"	"	"
Corizidae					
Corizus hyalinus	---	8♂(1,11)	X-0♂	Piza '46	Luiz de Queiroz 3.
Jadera sanguinolenta	13s	7♂(1)	"	"	"
Leptocoris haematoloma	13s	7♂(1,11)	"	Porter '17	B.B. 33.
L. trivittatus	13s 14o	---	X-0♂, X-X♂	Wilson '07, '09, '11	Sci. 25; J.E.Z. 6; J.M. 22.
"	13d	7♂(1)	X-0♂	Yocum '22, '23	A.R. 23; J.M. 37.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Dysodiidae					
Dysodius lunatus	31s	17♂(1,11)	2X-Y♂	Schrader '47	Evoluition 1.
Galgulidae (Gelastocoridae; Nerthridae)					
Galgulus oculatus (Gelastocoris)	35s,♂m 38o	20♂(1,11) 16,19 (tid)	XXXX-Y♂	Payne '09	B.B. 16.
Gerridae					
Gerris asper	21s	11♂(1,11)	---	Ekblom '39	A.Z.E.G. 81.
G. gibbifer	"	"	X-0♂	Poisson '36	A.Z.E.G. 78.
G. grocilicornis	19s	10♂(1,11)	"	Yosida '44, '46	Igaku & Seibutsugaku, 5; La Kromosomo 2-3.
G. lacustris	21s	11♂(1,11)	X-0♂	Poisson '36	A.Z.E.G. 78.
"	---	"	---	Geitler '37	Z.Z.M.A. 26.
G. lateralis	21s	11♂(1)	X-0♂	Poisson '36	A.Z.E.G. 78.
"	21s 22o	"	"	Geitler '37	Z.Z.M.A. 26.
"	"	---	Poly-ploidy occurs in tis-sue cells.	Geitler '39	Chrom. l.
G. najas	21s	11♂(1,11)	X-0♂	Poisson '36	A.Z.E.G. 78.
Hydrometridae					
Hydrometra lacustris	11s	12♂(1,11)	Large chrom. of gonia di-vides into 2 in cyte. (?)	Wilke '07,'13	Jena Z. 35; A. Zf. 10.
H. paludum	10-15(12)s	12(13,14) ♂(1) 12♂(11)	X-0♂(?)	Wilke '12,'13	Z.A. 40; A.Zf. 10.
Hygotrechus sp.	21s	11♂(1,11)	X-0♂	Montgomery '01,'06	Trans. Am. Phil. Soc. 20, 21.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Limnotrechus marginatus	---	11♂(1,11)	X-0♂	Montgomery '01,'06	Trans. Am. Phil. Soc. 20,21.
Lygaeidae					
Acompus rufipes	14s(?)	9♂(1) 8♂(11)	X-Y♂	Pfaler-Collander'41	Acta. Zool. Fenn. 30.
Aphanus japonicus	17s	11♂(1) 7(11)	XXXX-Y♂	Yosida '44, '46	Igaku & seibutsugaku, 5; La Kromosome 2-3.
A. phoeniceus	14o	8♂(1) 7♂(11) 7♀(1)	X-Y♂. 1 Supernumerary.	Pfaler-Collander'41	Acta. Zool. Fenn. 30.
A. pini	"	"	X-Y♂	"	"
Cymus angustatus	---	14♂(11)	"	Montgomery '01,'06	Trans. Am. Phil. Soc. 20; 21.
C. claviculus	---	15♂(1) 14♀(1)	"	Pfaler-Collander '41	Acta. Zool. Fenn. 30.
C. glandicolor	28s 28o	15♂(1) 14♂(11) 14♀(1)	"	"	"
C. luridus	---	15♂(1)	---	Montgomery '01	Proc. Acad. Nat. Sci. Phila. 53.
Drymus brunneus	20s 20n	11♂(1) 19♂(11) 10♀(1)	X-Y♂	Pfaler-Collander'41	Acta. Zool. Fenn. 30.
D. pilicornis	---	11♂(1) 10♂(11)	"	"	"
D. silvaticus	20(?)o	"	"	"	"
Eremocoris erraticus	20s	10(11)♂(1) 9(10)♂(11)	X-Y♂.	"	"
E. plebejus	"	11♂(1) 10♂(11) 10♀(1)	X-Y♂	"	"
Gastrodes ferrugineus	"	11♂(1) 10♂(11)	"	"	"
Geocoris ater	"	11♂(1) 10♂(11)	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
G. laponicus	20s 20o	11♂(1) 10♂(11) 10♀(1)	X-Y♂	Pfaler-Collander '41	Acta. Zool. Fenn. 30.
Ischnocoris hemipterus	16o	9♂(1) 8♂(11) 8♀(1)	"	"	"
Ischnodermus falicus	16s	9♂(1) 8♂(11)	"	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
I. sabuleti	16s 16o	9♂(1) 8♂(11) 8♀(1)	"	Pfaler-Collander'41	Acta. Zool. Fenn. 30.
Ischnorhynchus resedae	14s 14o	8♂(1) 7♂(11) 7♀(1)	"	"	"
Ligirocoris silvestris	16s 16o	9♂(1) 8♂(11) 8♀(1,11)	"	"	"
Lygaeus bicrucis	14s 14o	8♂(1) 7♂(11)	X-Y♂	Wilson '09, '12	J.E.Z. 6, 13.
L.(Spilostethus) equestris	14s	8♂(1) 7♂(11)	---	Schachow '32	A.A. 75.
"	14(15)s	8(9)♂(1) 7(8)♂(11)	X-Y♂. Sometimes Y=2 elements.	Pfaler-Collander'41	Acta. Zool. Fenn. 30.
"	14s	8♂(1) 7♂(11)	X-Y♂	Yosida '44, '46	Igaku & seibutsugaku, 5; La Kromosomo 2-3.
L. saxatilis	---	"	"	Geitler '39	Chrom. 1.
L. turcius	14s 14o	"	"	Wilson '05, '06	J.E.Z. 2,3.
Macrodema micropterum	18o	10♂(1) 9♂(11) 9♀(1)	"	Pfaler-Collander'41	Acta. Zool. Fenn. 30.
Melanocoryphus albomaculatus	14s	7♂(1) 7♂(11)	X-Y♂. X disjoins from Y in I-div.	Schachow '32	A.A. 75.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Nysius jacobeae	14s 14o	8♂(1) 7♂(11) 7♀(1)	X-Y♂	Pfaler-Collander '41	Acta. Zool. Fenn. 30.
N. lineatus	"	"	"	"	"
N. punctipennis	14s	8♂(1) 7♂(11) 7♀(1,11)	"	"	"
N. thymi	14s 14o	8♂(1) 7♂(11) 7♀(1)	"	"	"
Oedancala dorsalis	13s	7♂(1,11)	X-0♂	Montgomery '01,'04,'06	Trans. Am. Phil. Soc. 20; B.B. 6; Trans. Am. Phil. Soc. 21.
Oncopeltus fasciatus	16s	9♂(1) 8♂(11)	X-Y♂	Montgomery '01,'06	Trans. Am. Phil. Soc. 20,21.
"	16s 16o	9♂(1) 8♂(11)	X-Y♂. X & Y similar in size.	Wilson '09, '12	J.E.Z. 6, 13.
Pamera fraticollis	16o	9♂(1) 8♂(11) 8♀(1)	X-Y♂	Pfaler-Collander '41	Acta. Zool. Fenn. 30.
Peliopelta abbreviata	14s	8♂(1) 7♂(11)	X-Y♂. X & Y similar in size.	Montgomery '01,'06	Trans. Am. Phil. Soc. 20,21.
Pelitrechus angusticollis ---		"	X-Y♂	Pfaler-Collander '41	Acta. Zool. Fenn. 30.
P. geniculatus	14s	8♂(1) 7♀(1)	"	"	"
P. nubilus	14o	8♂(1) 7♂(11) 7♀(1)	"	"	"
Philomyrmex insignis	16s	9♂(1) 8♂(11)	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pinosomus varius	18o	10♂(1) 9♂(11) 9♀(1)	X-Y♂	Pfaler-Collander '41	Acta. Zool. Fenn. 30.
Plinthisus pusillus	"	9♂(1) 9♂(11) 9(1)♀(11)	---	"	"
Pterotmetus stophylinoides	18s 18o	10♂(1) 9♂(11) 9♀(1)	X-Y♂. 1 supernumerary occurs.	"	"
Rhyparochromus antennatus	---	8♂(1) 7♂(11) 7♀(1)	X-Y♂	"	"
Rh. chiragra	14s	"	XX-Y♂	"	"
Scoloposiethus affinis	20o	11♂(1) 10♂(11)	X-Y♂	"	"
S. decoratus	---	11♂(1) 10♂(11) 10♀(1)	"	"	"
S. pictus	---	"	"	"	"
Stigonocoris fuligineus	16s 16o	9♂(1) 8♂(11) 8♀(1)	"	"	"
S. pedestris	"	"	"	"	"
S. pygmaeus	16o	"	"	"	"
S. rusticus	18o	10♂(1) 9♂(11) 9♀(1)	"	"	"
Trapezonotus anorus	16o	9♂(1) 8♂(11)	"	"	"
T. arenarius	16s 16o	9♂(1) 8♂(11) 8♀(1)	"	"	"
T. distinguendus	14o	8♂(1) 7♂(11) 7♀(1)	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
T.(Sphragisticus) nebulosus	14o	10♂(1) 9♂(11) 9♀(1)	3X-X♂	Pfaler-Collander '41	Acta. Zool. Fenn. 30.
Tropidothorax leucopterus	1(15)s	7♂(1) 7,8♂(11)	X-2Y♂. X disjoins from 2Y in I-div.	Schachow '32	A.A. 75.
Tropistethus holosericeus	---	8♂(1) 7♂(11)	X-Y♂	Pfaler-Collander'41	Acta. Zool. Fenn. 30.
Mesovelidae					
Mesovelia furcata	35s	---	4X-Y♂	Ekblom '41	Chrom. 2.
Nabidae					
Coriscus ferus	---	10♂(1)	---	Montgomery '01	Trans. Am. Phil. Soc. 20.
Nabis annulatus	---	10♂(1) 8(9)♂(11)	X-Y♂	Montgomery '01,'06	Proc. Acad. Nat. Sci. Phila. 53; Trans. Am. Phil. Soc. 21.
N. apterus	---	10♂(1,11)	---	Meijere '30	Z.A. 88.
"	---	20♂(1,11)	"	Yosida '49, '50	Abstr. Sci. Res. 2; Iden-Sogo-Kenkyu 1.
Reduviolus(Aptus) apterus	---	20♂(1,11)	"	Schachow '32	A.A. 75.
R. ferus	---	10♂(1,11)	"	"	"
R. rugosus	---	"	"	"	"
Naucoridae					
Naucoris cimicoides	51s	26♂(1,11)	X-0♂	Steopoe '29	C.R.S.B. 102.
N. conspersus	---	17♂(1)	"	Poisson '36	A.Z.E.G. 78.
N. maculatus	---	16♂(1) 16♂(11)	---	Poisson '21	C.R.A.S. 172.
Pelocoris femorata	20(?)s	---	---	Montgomery '01	Trans. Am. Phil. Soc. 20.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Nepidae					
Nepa cinerea	35s 36o	18♂(1) 17,18♂(11)	X-0♂. X undiv. to pole in I-div.	Spaul '22	Jour. Roy. Micr. Soc. 3.
"	33s	19♂(1,11) 15,18(tid)	XXXX-Y♂	Steopoe '25, '30, '32	C.R.S.B. 92; Ann. Soc. Univ. Jassy 16; A.Z.E.G. 72.
Ranatra linearis	43s	24♂(1) 20,23(tid)	5 elements run to 1 pole in II-div.	Steopoe '27	C.R.S.B. 96.
R. chinensis	46s	24♂(1) 23♂(11)	X-Y♂	Shikato '49	Jap. J.G. 22.
Ranatra sp.	40s	21♂(1) 20♂(11)	X-Y♂. 8-10 supernumeraries occur.	Chickering '18	Trans. Am. Micr. Soc. 37.
Notonectidae					
Notonecta glauca	---	12-13♂(1) 12♂(11)	---	Pantel & Sinety '06	L.C. 23.
"	24s 24o	13♂(1) 12♂(11)	X-Y♂	Browne '16	J.M. 27.
N. insulata	---	13,14♂(1) 12♂(11)	"	Browne '10	B.B. 20.
N. irrorata	24s	13♂(1) 12♂(11)	"	Browne '10, '13, '16	B.B. 20; J.E.Z. 14; J.M. 27.
N. macurata	"	"	"	Poisson '27	A.Z.E.G. 66.
N. undulata	26s	14♂(1) 13♂(11)	"	Browne '10, '13	B.B. 20; J.E.Z. 14.
N. indica N. shooteri N. undulata	26s 26o	14♂(1) 13♂(11)	X-Y♂	Browne '16	J.M. 27.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pentatomidae					
Acanthosoma denticauda (?)	12s	7♂(1)	---	Toshioka '35	Bot. & Zool.(Tokyo),3.
A. denticauda	"	7♂(1) 6♂(11)	X-Y♂. X & Y similar in size.	Yosida '44, '47	Igaku & seibutsugaku,5; La Kromosomo 2,3,4.
A. labiduroides	"	"	X-Y♂	"	"
Aelia accuminata	14s	8♂(1) 7♂(11)	"	Schachow '32	A.A. 75.
A. fieberi(lewisi?)	"	"	"	Nishimura '27	Z.M.(Jap.) 39.
A. fieberi	"	"	"	Yosida '49a,b	Abstr. Sci. Res. 2; Iden-Sogo-Kenkyu 1.
Ancyrosoma albilineatus	---	"	"	Schachow '32	A.A. 75.
Arma custus	14s	"	"	"	"
Banasa calva	26s 26o	14♂(1) 13♂(11)	"	Wilson '05	J.E.Z. 2.
"	---	15♂(1) 13,14♂(11)	X-Y♂. supernumeraries occur.	Wilson '07	B.B. 12.
B. dimidiata	16s 16o	9♂(1) 8♂(11)	X-Y♂	"	"
Brachystethus subromaculatus	14s	8♂(1) 7♂(11)	X-Y♂, aberrant meiosis occurs.	Schrader '46	B.B. 90.
Brochymena sp.	"	"	X-Y♂	Montgomery '01,'06	Trans. Am. Phil. Soc. 20, 21.
Brochymena sp.	"	8♂(1) 7♂(11)	"	Wilson '05	J.E.Z. 2.
Caloptenus sp.	12s	12♂(1) 6♂(11)	---	Montgomery '98	Z. Jb. 12.
Carpocoris fuscispinus	---	8♂(1) 7♂(11)	X-Y♂	Schachow '32	A.A. 75.

Species	Chromosome Number 2n	n	Remarks	Observer	References
C. fuscispina	---	8♂(1) 7♂(11)	X-Y♂	Geitler '39	Chrom. 1.
C. melanocerus	---	"	"	"	"
C. purpureipennis	---	"	"	Oksala '47	Hered. 33.
"	14s	"	"	Yosida '49, '50	Abstr. Sci. Res. 2; Iden-Sogo-Kenkyu 1.
C. pudicus	"	"	"	Schachow '32	A.A. 75.
Codophila varia	"	"	"	"	"
Coenus delius	"	"	"	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
"	14s 14o	8(9)♂(1) 7♂(11)	"	Wilson '05, '06	J.E.Z. 2, 3.
Coptosoma biguttula	12s	7♂(1) 6♂(11)	"	Toshioka '34	Z.M.(Jap.) 46.
"	14s	8♂(1) 7♂(11)	"	Yosida '49, '50	Abstr. Sci. Res. 2; Iden-Sogo-Kenkyu 1.
C. punctissimum	12s	7♂(1) 6♂(11)	"	Toshioka '34	Z.M.(Jap.) 46.
"	"	"	"	Yosida '44, '47	Igaku & Seibutsugaku, 5; La Kromosomo2,3,4.
Corbula abbreviata	14s	8♂(1) 7♂(11)	X-Y♂	Yosida '49, '50	Abstr. Sci. Res. 2; Iden-Sogo-Kenkyu 1.
Cosmopepla carnifex	16s	9♂(1) 8♂(11)	"	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
Dinidor rufocinctus	21s 22o	11♂(1) 10♂(11)	2X-Y♂	Schrader '47	Evolution 1.
Dolycoris baccarum	14s	8♂(1) 7♂(11)	X-Y♂	Schachow '32	A.A. 75.
"	"	"	"	Nishimura '35	Manshu Seibutsu.-Kaiho, (1935).
Dolycoris baccarum	---	8♂(1) 7♂(11)	---	Geitler '39	Chrom. 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Dolycoris baccarum	14o	---	---	Yosida '44, '47	Igaku & Seibutsugaku, 5; La Kromosome2,3,4.
"	---	8♂(1) 7♂(11)	X-Y♂	Oksala '47	Hered. 33.
Edessa irrorata	14s	"	X-Y♂. Non-homologous association occurs.	Schrader'41	J.M. 69.
Elasmostethus humeralis	12s	7♂(1) 6♂(11)	X-Y♂	Yosida '44, '47	Igaku & Seibutsugaku, 5; La Kromosome2,3,4.
Eurydema dominulus	---	8♂(1) 7♂(11)	---	Geitler'39	Chrom. 1.
E. festiva	14s	"	X-Y♂	Schachow'32	A.A. 75.
E. oleoracea	"	"	"	"	"
E. oleoraceum	---	"	---	Geitler '39	Chrom. 1.
E. ornata pectoralis	14s	"	X-Y♂	Schachow '32	A.A. 75.
E. pulchrum	"	"	"	Nishimura '35	Manshu Hakubutsu.-Kaiho,(1935)
E. rugosum	"	"	---	Nishimura '27	Z.M.(Jap.) 39.
E. rugosa	"	"	X-Y♂	Yosida '44, '47	Igaku & Seibutsugaku, 5; La Kromosome2,3,4,
E. ventrale	---	"	---	Geitler '39	Chrom. 1.
Eurygaster alternatus	---	7♂(1) 6♂(11)	X-Y♂	Montgomery 'C1,'06	Trans. Am. Phil. Soc. 20, 21.
E. austriacus	12s	"	"	Schachow '32	A.A. 75.
E. maura	"	"	"	"	"
E. maurus	---	8♂(1) 7♂(11)	"	Geitler '39	Chrom. 1.
Eusarcoris aeneus	16s	9♂(1) 8♂(11)	"	Schachow '32	A.A. 75.
E. venustissimus	"	"	"	"	"
E. guttigera	14s	8♂(1) 7♂(11)	"	Toshioka '37	Cyt. Fujii Jub.-Vol.

Species	Chromosome Number 2n	n	Remarks	Observer	References
E. lewisi	14s	8♂(1) 7♂(11)	X-Y♂	Yosida '44, '47	Igaku & Seibutsugaku, 5; La Kromosomo 2,3,4.
E. parvus	"	"	"	Toshioka '37	Cyt. Fujii Jub. -Vol.
E. ventralis	"	"	"	"	"
Eusarcoris sp.	"	"	"	"	"
Euschistus erassus	12s 12o	7♂(1) 6♂(11)	"	Foot & Strobell '12	A.Zf. 9.
E. fissilis	14s 14o	8♂(1) 7♂(11)	"	Wilson '05, '06	J.E.Z. 2,3.
E. ictericus	"	---	"	Wilson '06	J.E.Z. 3.
E. servus	14s 14o	---	"	Wilson '06	"
"	14m	8♂(1) 7♂(11)	"	Foot & Strobell'14	A. Zf. 12.
Euschistus tristigmus	14s	8♂(1) 7♂(11)	X-Y♂	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
"	14s 14o	---	"	Wilson '06	J.E.Z. 3.
E. variolarius (Pentatoma?)	14s	8♂(1) 7♂(11)	"	Montgomery '97, '98, '01, '06, '10, '11	Z.A. 20; Z.Jb. 12; Trans. Am. Phil. Soc. 20, 21; A.Zf. 5; J.M. 22.
"	14s 14o	---	"	Wilson '06	J.E.Z. 3.
"	14m	8♂(1) 7♂(11)	"	Foot & Strobell'14	A.Zf. 12.
Euschistus sp.	13,14,15s	8,9,10,11 ♂(1) 6,7,8,9 ♂ (11)	---	Montgomery '10, '11	A.Z.M.A. 5; J.M. 22.
E. variolarius x E. servus	14s	8-5♂(11)	---	Foot & Strobell'14	A.Zf. 12.
Graphosoma italicum	---	8♂(1) ?♂(11)	X-Y♂	Geitler '39	Chrom. 1.
G. rubrolineatum	14s	"	"	Yosida '49, '50	Abstr. Sci. Res. 2; Iden-Sogo-Kenkyu 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
G. semipunctata	14s	8♂(1) 7♂(11)	X-Y♂	Schachow '32	A.A. 75.
Halyomorpha picus	"	"	"	Nishimura '35	Manshu Hakubotsu.-Kaiho (1935)
"	"	"	"	Yosida '44, '47	Igaku & Seibutsugaku, 5; La Kromosomo2-3,4
Lelia decempunctata	"	"	"	"	"
Loxa flavicollis	"	"	X-Y♂. Hetero-ploidy occurs.	Schrader '45 a,b	B.B. 88; J.M. 76.
L. florida	---	16-30♂(1)	---	Bowen '22	B.B. 43.
"	14s	8♂(1) 7♂(11)	X-Y Hetero-ploidy occurs.	Schrader '45	B.B. 88.
L. picticornis	"	"	"	Schrader '45 a,b	B.B. 88; J.M. 76.
Mayrinia variegata	"	"	"	Schrader '45	B.B. 88.
Megymenum gracilicorne	20s	11♂(1) 10♂(11)	X-Y♂	Toshioka '35	Konchu 9.
Mecistorhinus melanoleucus	14s	8♂(1) 7♂(11)	X-Y♂, aberrant meiosis occurs.	Schrader '46	B.B. 90.
M. sepulcralis	"	"	"	"	"
M. triptcrus	"	"	"	"	"
Menide violacea	"	"	X-Y♂	Yosida '49, '50	Abstr. Sci. Res. 2; Iden-Sogo-Kenkyu 1.
Mineus bioculatus	---	7♂(tid)	X-Y♂, X & Y similar in size.	Wilson '06	J.E.Z. 3.
Mormidea lugens	14s	8♂(1) 7♂(11)	X-Y♂	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Murgantia histrionica	---	7♂(11)	---	Bowen '22	J.M. 37.
Neodine macraspis	14s	8♂(1) 7♂(11)	Aberrant meiosis occurs.	Schrader '46	B.B. 90.
Nezara antennata	14s	8♂(1) 7♂(11)	---	Nishimura '27	Z.M.(Jap.) 39.
"	14o	---	---	Yosida '49, '50	Abstr. Sci. Res. 2; Iden-Sogo-Kenkyu 1.
N. hilaris	14s	---	---	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
"	14s 14o	8♂(1) 7♂(11)	X-Y♂, X & Y similar in size.	Wilson '05, '06	J.E.Z. 2,3.
N. viridula	"	"	X-Y♂	Wilson '05, '11	J.E.Z. 2, 22.
Oebalus pugnax	10s 10o	---	"	Wilson '09	J.E.Z. 6.
Ophryatrocha sp.	4o	4♂(1) 2-4♂(11)	---	Montgomery '98	Z.Jb. 12.
Odontotarsus purpurolineatus	12s	7♂(1) 6♂(11)	X-Y♂	Schachow '32	A.A. 75.
Odontotarsus robustus	12s	7♂(1) 6♂(11)	X-Y♂	Schachow '32	A.A. 75.
Palomena angulosa	16s 16o	9♂(1) 8♂(11)	"	Yosida '44, '47	Igaku & Seibutsugaku 5; La Kromosomo 2,3,4.
P. prasina	16s	"	---	Geitler '39	Chrom. 1.
Pentatoma juniperina (Chlorochroa)	14s	---	---	Wilson '13	B.B. 24
P. senilis (Phytodolomia)	6s	4♂(1) 3♂(11)	X-Y♂	"	"
P. rufipes	---	8♂(1) 7♂(11)	---	Geitler '39	Chrom. 1.
"	14s	"	X-Y♂	Yosida '49, '50	Abstr. Sci. Res. 2; Iden-Sogo-Kenkyu 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pentatoma sp.	14s	8(8-11)♂(1) 7(6-9)♂(11)	X-Y♂	Montgomery '97,'98,'01, '06,'10,'11	Z.A. 20; Z. Jb. 12; Trans. Am. Phil. Soc. 20,21; A. Zf. 5; J.M. 22.
Pentatoma sp.	14o	---	---	Yosida '44,'47	Igaku & Seibutsugaku 5; La Kromosomo 2,3,4.
Perillus confluens	14s	8♂(1) 7♂(11)	X-Y♂	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
Peromatus notatus	"	"	"	Schrader '41	B.B. 81.
Picromerus bidens	---	"	"	Geitler '39	Chrom. 1.
"	12s	7♂(1) 6♂(11)	"	Yosida'44,'47	Igaku & Seibutsugaku 5; La Kromosomo 2,3,4.
Piezodorus lituretus	14s	8♂(1) 7♂(11)	"	Schachow '32	A.A. 75.
Platycarneus notulatus	"	"	X-Y♂, Aberrant Meiosis occurs.	Schrader '46	B.B. 90.
Podisus bracteatus	14s	---	---	Wilson '09	Proc. 7th Int. Zool. Cong. Boston, 1907.
P. crocatus	"	---	---	"	"
P. modestus	16s	---	---	"	"
P. placidus	"	---	---	"	"
P. spinosus (maculiventris)	16s	9♂(1) 8♂(11)	X-Y♂	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
"	16s 16o	"	"	Wilson '05, '06	J.E.Z. 2,3.
Polomena prasima (palomena?)	16s	"	"	Schachow '32	A.A. 75.
P. venustissimus	"	"	"	"	"
Rhytidolomia sancia	14o	---	---	Schrader '40	J.M. 67.
Rh.(Pentatoma)senilis	6s 6o	3♂(1,11)	X-Y♂, X & Y similar in size.	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Scotinophora horvathi	14s	8♂(1) 7♂(11)	X-Y♂	Toshioka '34	Oyo-Dobutsugaku-Z.
Stiretrus anchorago	14s 14o	---	"	Wilson '09	J.E.Z. 6.
Thyanta calceata	27s 28o	15♂(1)	$X_I X_{II}$-Y♂	Wilson '09, '11	Proc. 7th Int. Zool. Cong. Boston, 1909; J.M. 22.
T. custator	16s 16o	---	X-Y♂	Wilson '11	J.M. 22.
Trichopepla semivittata	16s	8♂(1) 7♂(11)	"	Montgomery '01, '04, '06	Trans. Am. Phil. Soc. 20; B.B. 6; Trans. Am. Phil. Soc. 21.
"	---	8-9♂(1) 7♂(11)	X-Y♂. Small chroms. of gonia usually lacking in cytes.	Wilson '05	J.E.Z. 2.
Tropicoris japonicum	14s	8♂(1) 7♂(11)	X-Y♂	Nishimura '35	Manshu Hakubutsu.-Kaiho (1935).
Phymatidae					
Phymata wolffi (?)	29?s	15♂(1)	X-O♂(?)	Montgomery '01, '06	Trans. Am. Phil. Soc. 20, 21.
Pyrrochoridae					
Dysdercus ruficollis	13s	7♂(1,11)	X-O♂	Piza '47	Leiz de Queirez 4.
Euryophthalmus rufinennis	"	"	"	Piza '46	Leiz de Queirez 3.
Largus cinctus	11s 12o	---	X-O♂	Wilson '07, '09	Sci. 25; J.E.Z. 6.
L. succintus	13s 14o	---	"	"	"
Pyrrochoris apterus	24s,♂m 24o,♀m	12♂(1) 11-12♂(11) 12♂(1,11)	"	Henking '90, '91, '92	Int. Monats. Anat. Phys. 7; Z.W.Z. 51, 54.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pyrrochoris apterus	24s,m 24o	12♂(1,11) 11,12(tid)	XX-O♂	Gross '06, '12	Z.Jb. 23, 32.
"	23s 24o	"	X-O♂	Wilson '09a,b	J.E.Z. 6; B.B. 16.
Reduvidae					
Acholla ampliata (multispinosa)	32s	16♂(1,11)	---	Montgomery '01,'06,'10	Trans. Am. Phil. Soc. 20, 21; A. Zf. 5.
"	---	16♂(1)	---	Payne '10	B.B. 18.
A. multispinosa (Sinea diadema)	---	16♂(1,11)	3 elements associated in I-div.	Montgomery '01,'66,'16	Trans. Am. Phil. Soc. 20, 21; A. Zf. 5.
"	26s 30o	16♂(1,11) 11,15(tid)	5X-Y♂	Payne '10	B.B. 18.
Apiomeris crassipes	24s	13♂(1) 12♂(11)	X-Y♂	Payne '12	J.M. 23.
Conorhinus sanguisugus	23s	13♂(1,11) 11,12(tid)	XX-Y♂	Payne '09, '12	B.B. 16; J.M. 23.
Diplacodus exsanguis	26♂m 26♀m	14♂(1) 13♂(11)	X-Y♂	Payne '09	B.B. 16.
Fitchia spinosula	27s 28o	15♂(1,11) 13,14(tid)	XX-Y♂	Payne '09	B.B. 16.
Macrothylacia rubi	---	14♂(1)	---	Meijere '30	Z.A. 88.
Pnirontis modesta	25s	15♂(1,11) 11,14(tid)	XXXX-Y♂	Payne '12	J.M. 23.
Polididus armatissimus	12s	7♂(1) 6♂(11)	X-Y♂, X & Y similar in size.	Toshioka '36	Konchu 10.
Prionidus cristatus	26s	---	---	Montgomery '01,'06	Trans. Am. Phil. Soc. 20, 21.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Prionidus cristatus	26s 28o	15♂(1,11) 12,14(tid)	XXX-Y♂	Payne '09	B.B. 16.
Pselliodes cinctus	28s 30o	16♂(1,11) 13,15(tid)	"	Payne '12	J.M. 23.
P. cinctus (milyas)	"	16♂(1,11)	"	Goldsmith '16	B.B. 31.
Reduvius personatus	--->	12♂(1) 11♀(11)	X-Y♂	Payne '12	J.M. 23.
Rocconata annulicornis	27s	15♂(1,11) 13,14(tid)	XX-Y♂	Payne '09	B.B. 16.
Sinea complexa S. confusa S. diadema S. spinipes	28s 30s	16♂(1,11) 13,15(tid)	XXX-Y♂	Payne '09, '12	B.B. 16; J.M. 23.
S. rileyi	---	18♂(1,11) 13,17(tid)	5X-Y♂	Payne '12	J.M. 23.
Velinus nodipes	28s 30o	16♂(1) 13♂(11) 13,15(tid)	XXX-Y♂	Toshioka '33	Oyo-Dobutsugaku-Z. 5.
"	28s	16♂(1) 13♂(11) 13,15(tid)	"	Yosida '44, '47	Igaku & Seibutsugaku 5; La Kromosomo 2,3,4.
Tingitidae					
Stephanitis nashi	14s	7♂(1,11)	X-Y♂. X disjoins from Y in I-div.	Toshioka '34	Oyo-Dobutsugaku-Z. 5.
Tingis clavata	---	7♂(1,11)	"	Montgomery '01, '06	Proc. Acad. Nat. Sci. Phila. 53; Trans. Am. Phil. Soc. 21.
Velliidae					
Velia currens	25s	13♂(1)	X-O♂	Poisson '36	A.Z.E.G. 78.

Species	Chromosome Number 2n	n	Remarks	Observer	References
MEGALOPTERA					
Raphidiidae					
Rhaphidia nigricollis	24s 24♀m	12♂(1)	X-Y♂	Naville & Beaumont '36	Arch. d'Anat. Micr. 32.
R. xanthostigma	26s	---	X-Y♂	Klingstedt '37	Nat. 139.
Sialidae					
Chauliodes japonicus	20s 20o	---	X-Y♂	Itoh '33	Z.M. (Jap.) 45.
Protohermes grandis	23s	---	X-Y♂	"	"
PLANIPENNIA					
Ascalaphidae					
Ascalaphus ictericus corsicuss	20o	10♂(1)	X-Y♂	Naville & Beaumont '36	Arch. d'Anat. Micr. 29.
A. libelluloides	22o,♀m	11♂(1,11)	"	"	"
A. longicornis	22o	---	X-X♀	"	"
Glyptobasis dentifera	22s	---	X-Y♂	Asara & Kichijo '36	J.F.S. Hokkaido I.U. Ser. VI, 5.
Hybris subjacens	"	11♂(1,11)	"	Katayama '39	Jap. J.G. 15.
Ogcogaster segmentator	"	---	"	Asana & Kichijo '36	J.F.S. Hokkaido I.U. Ser. VI, 5.
Chrysopidae					
Chrysopa aspersa (Ch. prasina)	12s,o	6♂(1)	X-Y♂	Naville & Beaumont '33, '36	Arch. d'Anat. Micr. 29, 32.
Ch. (Chrysotropia) alba	"	6♂(1,11)	"	"	"
Ch. carnea	---	7♀(1)	---	Klingstedt '33	Mem. Soc. F. Fl. Fenn. 10.
Ch. cognatella	12s 12♀m	6♂(1,11)	X-Y♂	Kichijo '43	Nagasaki Med. Jour. 21.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ch. (Nineta) flava	14s	7♂(1)	X-Y♂	Naville & Beaumont '36	Arch. d'Anat. Micr. 32.
Ch. flavifrons	12o	---	X-X♀	"	"
Ch. formosa	12s	6♂(1)	X-Y♂	"	"
Ch. intima	"	"	"	Kichijo '34	J.F.S. Hokkaido I.U. Ser. VI. 3.
Ch. japana	"	"	"	"	"
Ch. kurisakiana	---	"	"	"	"
Ch. parabola	---	6♂(1,11)	"	Kichijo '43	Nagasaki Med. Jour. 21.
Chrysopa perla	12s,o	6♂(1,11)	X-Y♂	Naville & Beaumont '32, '33	C.R. Soc. Phy. Hist. Nat. Geneve 49; Arch. d'Anat. Micr. 29.
Ch. sapporensis	12s	6♂(1)	"	Kichijo '34	J.F.S. Hokkaido I.U. Ser. VI, 3.
Ch. septempunctata	10s	5♂(11)	"	Naville & Beaumont '32, '33	C.R. Soc. Phy. Hist. Nat. Geneve 49; Arch. d'Anat. Micr. 29.
Ch. sept. cognata	10s,o	5♂(1,11)	"	Kichijo '35	Z.M.(Jap.) 47.
Ch. venosa	---	6♂(1)	"	Naville & Beaumont '36	Arch. d'Anat. Micr. 32.
Ch. ventralis	12o	---	X-X♀	"	"
Ch. viridana	---	6♂(1)	X-Y♂	"	"
Ch. vulgaris	12s 12o,♀m	"	"	Naville & Beaumont '33	Arch. d'Anat. Micr. 29.
"	16s	---	"	Brückner '35	Jena Z. 69.
Chrysopa sp.	10s	5♂(1)	"	Naville & Beaumont '33	Arch. d'Anat. Micr. 29.
Chrysotropia japonica	12s	6♂(1)	"	Kichijo '34	J.F.S. Hokkaido I.U. Ser. VI, 3.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Coniopterygidae					
Semidalis albata	18o	---	---	Kichijo '43	Nagasaki Med. Jour. 21.
S. aleurodiformis	18o,♀m	---	---	Naville & Beaumont '33	Arch. d'Anat. Micr. 29.
Hemerobiidae					
Hemerobius humuli	14s	7♂(1)	X-Y♂	Naville & Beaumont '36	Arch. d'Anat. Micr. 32.
H. humulinus	"	---	"	Klingstedt '33	Mem. Soc. F. Fl. Fenn. 10.
H. limbatellus (H. stigma)	14o,♀m	---	X-X♀	Naville & Beaumont '33	Arch. d'Anat. Micr. 29.
H. pini (H. atrifrons)	14s, 14o,♀m	7♂(1,11)	X-Y♂	"	"
H. stigma	14s	7♂(1,11)	"	Klingstedt '33	Mem. Soc. F. Fl. Fenn. 10.
Mantispidae					
Mantispa styriaca	18s	9♂(1,11)	X-Y♂	Naville & Beaumont '33	Arch. d'Anat. Micr. 29.
Myrmeleonidae					
Acanthaclisis japonica	---	7♂(1)	X-Y♂	Ikeda & Kichijo '35	Z.M.(Jap.) 47.
Creagris plumbea	18s	9♂(1,11)	"	Naville & Beaumont '36	Arch. d'Anat. Micr. 32.
Macronemurus appendiculatus	16s	8♂(1,11) 8♀(1)	X-Y♂	Naville & Beaumont '33	Arch. d'Anat. Micr. 29.
Macronemurus sp.	"	8♂(1,11)	"	Asana & Kichijo '36	J.F.S. Hokkaido I.U. Ser. VI, 5.
Morter hyalinus	14s	7♂(1,11)	"	Naville & Beaumont '36	Arch. d'Anat. Micr. 32.
Myrmecaelurus acerbus (?)	"	"	"	Asana & Kichijo '36	J.F.S. Hokkaido I.U. Ser. VI, 5.
Myrmeleon europaeus	14s,♂m 14o,♀m	"	"	Naville & Beaumont '32,'33	C.R. Soc. Phy. Hist. Nat. Geneve 49; Arch. d'Anat. Micr. 29.

NEUROPTERA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
M. formicarius	---	7♂(1,11)	X-Y♂	Ikeda & Kichijo '35	Z.M.(Jap.) 47.
M. sagax (?)	14s	"	"	Asana & Kichijo '36	J.F.S. Hokkaido I.U. Ser. VI, 5.
Neuroleon sp.	16s	8♂(1,11)	"	"	"
Palpares libelluloides	26s	13♂(1,11)	"	Naville & Beaumont '36	Arch. d'Anat. Micr. 32.
P. pardus asanai	---	12♂(1)	"	Oguma & Asana '32	J.F.S. Hokkaido I.U. Ser. VI, 1.
"	26s	13♂(1)	X-Y. Secondary association in I.	Makino '38, '48	Kagaku 8; Oguma Comm. Vol. Cyt. Genet 1.
Osmylidae					
Eososmylus harmandinus	14s	7♂(1,11)	X-Y♂	Kichijo '43	Nagasaki Med. Jour. 2.
Osmylus chrysops	14s 14o	"	"	Naville & Beaumont '32,'33	C.R. Soc. Phy Hist. Nat. Geneve, 49; Arch. d'Anat. Micr. 29.
Sisyridae					
Sisyra fuscata	14s	---	X-Y♂	Klingstedt '37	Nat. 139.

MECOPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Panorpidae					
Panorpa alpina	---	23♂(1)	X-O♂	Naville & Beaumont '34	B.B. Fr. Bel. 68
P. cognata	---	22♂(1) 21,22♂(11)	"	"	"
P. communis	---	14-18♂(1)	---	Carnoy '85	L.C. 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
P. communis	---	23♂(1) 22,23♂(11)	X-O♂	Naville & Beaumont '34	B.B. Fr. Bel. 68.
Panorpa germanica	---	21♂(1) 20,21♂(11)	X-O♂	Naville & Beaumont '34	B.B. Fr. Bel. 68.
P. japonica	46o	---	X-X♀	Kichijo '43	Nagasaki Med. Jour. 21.

TRICHOPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
ANNULIPALPIA					
Hydropsychidae					
Hydropsyche pellucidula	30s	15♂(1)	---	Pchakadze '30	Arch. Russ. Anat. Hist. Embr. 9.
Polycentropidae					
Plectrocnemia conspersa	26s	13♂(1,11)	---	Pchakadze '30	Arch. Russ. Anat. Hist. Embr. 9.
Rhyacophilidae					
Rhyacophila nubila	---	23♂(1,11)	---	Pchakadze '30	Arch. Russ. Anat. Hist. Embr. 9.
Stenopsychidae					
Stenopsyche griseipennis	26s 25♀m	13♂(1,11)	X-X♂, X-O♀	Makino & Kichijo '34	J.F.S. Hokkaido I.U. Ser. VI, 3.
INTEGRIPALPIA					
Leptoceridae					
Leptocerus aterrimus	---	25♂(1,11)	---	Pchakadze '36	Arch. Russ. Anat. Hist. Embr. 9.
L. excisus	---	"	---	"	"
Limnophilidae					
Anabolia sororcula	---	30♂(1)	---	Pchakadze '28 , 30	Arch. Russ. Anat. Hist. Embr. 7,9.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Chaetopteryx villosa	60s	30♂(1,11)	---	Pchakadze '30	Arch. Russ. Anat. Hist. Embr. 9.
Glyphotaelius pellucidus	---	30♂(1,11)	---	"	"
Halesus tesselatus	42s	21♂(1,11)	---	"	"
Limnophilus affinis	12s	6♂(1)	---	"	"
L. centralis	---	13♂(1,11)	---	"	"
L. decipiens	20s 19♂,♀m	10♂(1,11) 10♀(1) 9,10♀(11)	X-X♂; X-0♀	Klingstedt '28,'31	Mem. Soc. F. Fl. Fenn. 4; Act. Zool. Fenn. 10.
L. flavicornis	---	30♂(1,11)	---	Pchakadze '30	Arch. Russ. Anat. Hist. Embr. 9.
Limnophilus lunatus	26s 25o	13♂(1,11)	X-X♂, X-0♀	Klingstedt '28	Mem. Soc. F. Fl. Fenn. 4.
L. nigriceps	32s	16♂(1,11)	---	Pchakadze '30	Arch. Russ. Anat. Hist. Embr. 9.
L. politus	---	30♂(1,11)	---	"	"
L. rhombicus	---	"	---	Pchakadze '28, '30	Arch. Russ. Anat. Hist. Embr. 7, 9.
L. stigma	60s	"	---	Pchakadze '30	Arch. Russ. Anat. Hist. Embr. 9.
Platyphylax designatus	55-60o	30♂(1,11)	---	Lutman '10	B.B. 19.
Stenophylax infumatus	---	"	---	Pchakadze '30	Arch. Russ. Anat. Hist. Embr. 9.
S. stellatus	---	29♂(1,11)	---	"	"
"	60s	30♀(1)	---	Gresson '33, '35	Proc. Roy. Soc. Edinburgh 53; Q.J.M.S. 78.
Molannidae					
Molanna angustata	---	27♂(1,11)	---	Pchakadze '30	Arch. Russ. Anat. Hist. Embr. 9.
Phryganidae					
Phryganea striata	---	28♂(1,11)	---	Pchakadze '30	Arch. Russ. Anat. Hist. Embr. 9.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Sericostomidae					
Goera pilosa	—	22♂(1,11)	—	Pchakadze '30	Arch. Russ. Anat. Hist. Embr. 9.

LEPIDOPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Arctiidae					
Arctia caja	---	31♂(1,11)	---	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
"	---	"	---	Beliajeff '30	Z.I.A.V. 54.
A. hebe	---	30-33♂(1)	---	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
Chelonia caja	---	24-28♂(1)	---	Carnoy '85	L.C. 1.
Hypocrita jocobaea	---	31♂(1)	---	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
Miltochrista zuiniata	---	"	---	Beliajeff '30	Z.I.A.V. 54.
Phragmatobia fuliginosa					
I. Rasse	56s, 57.58o	28♂(1,11); 28♀(1); 28♂,29♀(11)	Z-W1W2♀		
II. Rasse	56s, 56o	28♂(1,11); 28♀(1,11)		Seiler '25a,b	A.Zf. 13; Arch. Klaustiftung Vererbungsforsch. 1.
III. Rasse	58s, 58o	29♂(1,11); 29♀(1,11)			
II. Rasse x III. Rasse	---	28(?)	—	Seiler '25	Arch. Klaustiftung Vererbungsforsch. 1.
Spilosoma lubricipeda	—	31♂(11)	---	Beilajeff '30	Z.I.A.V. 54.
S. mendica	---	31♂(1,11)	---	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.

Species	Chromosome Number 2n	n	Remarks	Observer	References
S. menthastri	---	30♂(1)	---	Beliajeff '30	Z.I.A.V. 54.
Bombycidae					
Bombyx mori	---	12♀(1)	---	Henking '92	Z.W.Z. 54.
"	26-28s	28♂(1,11) 14♂(tid)	14 chroms. go to each pole in II-div.	Toyama '94, '94	Z.A. 17; Imp. Univ. Tokyo. Coll. Agr. Bull. II.
"	50-60s 50-60o	28♂(1,11)	---	Yatsu '13	Ann. Zool. Jap. 8.
"	28s	28♂(1,11) 14♂(tid)	14 chroms. go to each pole in II-div.	Katsuki '18	Bull. Imp. Seric. Exp. St. 1.
"	56s	"	---	Oguma '19	Z.M.(Jap.) 31.
"	---	28♂(1,11) 28♀(1,11)	---	Kawaguchi '28	Z.Z.M.A. 7.
"	60-79s 63-71o	+28o(1,11)	Normal (P^+) X plain(P).	Sato '29	Oyo Dobutsugaku-Z. 1.
"	---	35-42♂(1)	High temperature treatment; 4n.	Hashimoto '33	Bull. Imp. Seric. Exp. St. 8.
"	---	4n	Gynandromorph ♀ X normal ♂	Hashimoto '34	"
"	---	30-33) 31-33)♀(1) 28(?)♀(11)	Meiosis in unfertilized eggs.	Sato '34	Oyo Dobutsugaku-Z. 6.
"	43-62(56)s 37-49o 52♀m	28♂(1,11)	In indivs. developed from unfert. eggs.	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Bombyx mori	28-56-79m	28♂(1) 23-35♂(1) 34-46♂(11)	Artificial parth.	Kawaguchi '34	Sanshi-Z. 5.
"	28-56m	28♀(1)	Artif. parth. by iodine.	Frolowa '35	Zeit. Biol. 1.
"	---	30-48♂(1)	Heteroploidy.	Sato & Chino '34	Sanshi-Z. 7.
"	---	28♂(1,11)	---	Naville '37	L.C. 66.
"	56s 56o	28♂(1,11)) 28♀(1,11))	Diploidy (2n)	Tanaka & Kawaguchi '81	Jap. J.G. 7.
---	84s 84o	30-49♂(1)) 37-50♂(1)) 44-56♂(1)) Ca 39♀(1))	3n produced by centrifugal force.	Kawaguchi'38	Cyt. 9.
---	---	49-56♂(1)) 56♀(1))	4n, as above.		
"	---	28+1♂(11) 28+2♂(11)	Interracial hybrids.	Morohoshi'38	Jap. J.G. 14.
"	---	28-42♀(1)	4n produced by colchicine	Hirobe '39	Jap. J.G. 15.
"	28m	---	Artif. parth. by high temperature.	Frolova '40	C.R.A.S. URSS. 27.
"	---	28♀(1) 27♀(nurse cell)	Transl. between II-and W-chroms.	Kawaguchi & Suzuki '46	Seibutu 1.
"	---	28♂(1)	non-disjunction	Tsujita '49	Abstr. Sci. Res. 2.
B. mori x B. mandarina	---	27♂(1) 27-28♂(11)	Occasionally 26-28(1)	Kawaguchi'28	Z.Z.M.A. 7.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Bombyx (Theophila) mandarina	---	27♂(1,11)	---	Yatsu '13	Ann. Zool. Jap. 8.
"	---	27♂(1,11) 27♀(1)	---	Kawaguchi '28	Z.Z.M.A. 7.
Poecilocampa populi	---	36♂(11) 72,67♂(11) (4n)	4n due to Binucle-ate cells.	Federley '45	Soc. Sci. Fenn. Comm. Biol. 9.
Cymatophoridae					
Thyatira batis	---	31♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
Drepanidae					
Drepana curvatula	---	31♂(1)	---	Federley '49	Hered. 35.
D. falcataria	---	"	---	"	"
D. cur. X D. fall.	---	31,37,46, 53, etc. ♂(1)	---	"	"
D. fal. X D. cur.	---	32,36, 48,50,52, 55, etc. ♂(1)	Inter-sex occurs	"	"
F_2 of (fal. X cur.)	---	54,56, 57,59,60, ♂ (1)	---	"	"
Gelechiidae					
Tachyptilla populella	---	29♂(1)	---	Beliajeff '30	Z.I.A.V. 54.
Geometridae					
Abraxas grossulariata)	56s	28♂(1,11)	X-X♂,	Doncaster '10, '11, '12, '13, '14	Proc. Camb. Phil. Soc. 16; J.G. 1, 2,3,4,
)	56o	28♀(1,11)	X-0♀		
A. lacticolor)	(56o)	(27,28♀,11)			
Biston hirtaria	28s 28o	14♂(1)	---	Harrison & Doncaster '14	J.G. 3.
B. pumonaria	---	51♂(1)	---	Malan '18	Inaug. Diss. Zurich.
B. [illegible]onaria	---	56♂(1)	---	Harrison & Doncaster '14	J.G. 3.

Species	Chromosome Number 2n	n	Remarks	Observer	References
B. bum.♀ X B. hist.♂	---	45-55♂(1)	---	Malan '18	Mitt. Entomol. Zurich, 4.
B. zon.♀ X B. hist.♂	---	55-65♂(1)	---	Harrison & Doncaster '14	J.G. 3.
Boarmia consonaria	---	31♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
B. punctularia	---	32♂(1,11)	---	"	"
Geometridae sp.?	---	32♂(1,11)	---	"	"
Hygrochroa syringaria	---	29(?)♂(1)	---	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.
"	---	20♂(1,11)	---	Harrison '33	J.G. 27.
Larentia autumnalis	---	30♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
L. autumnata	---	38♂(1,11)	---	Harrison '20	J.G. 9.
L. dilutata	---	30♂(1,11)	---	"	"
L. filigrammaria	---	37♂(1,11)	---	"	"
L. filig.♀ X L. autumnata ♂	---	38(37 11+ 1_1) ♂	Number varies 39-43.	"	"
L. dilutata ♀ X L. autum.♂	68 m	68♂(1,11)	Reduction div. lacking.	"	"
Metrocampa margaritaria	---	31♂(1)	---	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.
Nyssia zonaria	Call2s	56♂(1,11) 50-60♀(1)	---	Doncaster '14	J.G. 4.
Phigalia pedaria	---	112♂(1)	---	Regnart '30	Proc. Univ. Durham Phil. Soc. 9.
Ourapteryx sambucaria	---	31♂(1)	---	Kernewitz '14,'15	Z.A. 45; Arch. Naturges. 81.
Selenia bilunaria	---	30♂(1)	---	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Selenia bilunaria	---	30♂(1)	---	Harrison '33	J.G. 27.
S. lunaria	---	31♂(1)	---	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.
"	---	31♂(1)	---	Harrison '33	J.G. 27.
S. tetralunaria	---	29♂(1)	---	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.
Zonosoma pendularia	---	31♂(1,11)	---	Beliajeff'30	Z.I.A.V. 54.
Zonosoma sp.?	---	"	---	"	"
Gracilariidae					
Gracilaria elongella	---	29♂(1)	---	"	Z.I.A.V. 54.
Hesperidae					
Adopaea lineola	---	29♂(1) 29♀(1)	---	Federley '38	Hered. 24.
Augiades sylvanus	---	29♂(1,11) 29♀(1) 28,29♀(11)	---	Federley '38	Hered. 24.
"	---	29♂(1)	---	Lorković '41	Chrom.2.
Carcharodus alceae	---	31♂(1,11)	---	"	"
Hesperia alveus	---	24♂(1) 24♀(1)	---	Federley '38	Hered. 24.
"	---	24♀(1,11)	---	Lorković '41	Chrom.2.
H.malvae	---	31♀(1)	---	Federley '38	Hered. 24.
H.onopordi	---	30♂(1,11)	---	Lorković '41	Chrom.2.
H.orbifer	---	30♂(11)	---	"	"
H.sao	---	31♂(11)	---	"	"
H.serratulae	---	30♂(1)	---	"	"
Thanaos tages	---	31♂(1,11)	---	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Hyponometutidae					
Hypnoomeuta evonymella	—	31♂(1)	—	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.
Japonomeutidae					
Japonomeuta evonymella	—	31♂(1,11)	—	Beliajeff '30	Z.I.A.V. 54.
Lasiocampidae					
Cosmotriche potatoria	—	31♂(1)	—	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
"	—	31♂(1,11)	—	Beliajeff '30	Z.I.A.V. 54.
Dendrolimus jezoensis	60s	30♂(1,11)	—	Makino '33	P.I.A. (Tokyo)9.
D. pini	—	30♂(1,11)	—	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
D. spectabilis	60s	"	—	Makino '33	P.I.A.(Tokyo)9.
Maracosoma castrense	—	31♂(1)	—	Kernewitz '14 '15	Z.A. 45; Arch. Naturges. 81.
M. neustria	—	"	—	Beliajeff '30	Z.I.A.V. 54.
Trichiura Crataegi	—	28♂(1,11)	Occasionally 29, due to non-disjunction.	Federley '45	Soc. Sci. Fenn. Comm. Biol. 9.
Libytheidae					
Libythea celtis	—	31♂(1,11)	—	Lorković '41	Chrom.2.
Lycaenidae					
Callophrys rubi	—	23♀(1)	—	Federley '38	Hered. 24.
Celastrina argiolus	—	25♂(1,11)	—	Lorković '41	Chrom.2.
Chrysophanus hippothoë	—	24♀(1)	—	Federley '38	Hered. 24.

LEPIDOPTERA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
C. phlaeas	—	24♂(1,11) 24♀(1)	—	Federley '38	Hered. 24.
C. virgaureae	—	24♂(1,11) 24♀(1)	—	"	"
Cupido alcetus	—	26♂(1,11)	—	Lorković '41	Chrom.2.
C. argiades	—	24♂(1,11)	—	"	"
C. decolorata	—	25♂(1,11)	—	"	"
C. minimus	—	24♂(1,11)	—	"	"
C. sebrus	—	24♂(1)	—	"	"
Cyaniris argiolus	—	25♀(1)	—	Federley '38	Hered. 24.
Glaucopsyche arion	—	23♂(1)	—	Lorković '41	Chrom.2.
G. cyllarus	—	23♂(1)	—	"	"
Lampides boeticus	—	24♀(1)	—	Federley '42	Hered. 28.
Lycaena agyrognomon	—	24♂(1,11) 24♀(1)	—	Federley '38	Hered. 24.
L. amandus	—	23♂(1) 23♀(1)	—	"	"
L. argus	—	"	—	"	"
L. arion	—	23♀(1)	—	"	"
L. astrarche	—	23♂(1,11) 24♀(1)	—	"	"
L. eumedon	—	24♀(1)	—	"	"
L. dorilis	—	24♂(1,11)	—	Lorković '41	Chrom. 2.
Lycaena icarus	—	23♂(1) 22-23♀(1)	—	Federley '38	Hered. 24.
L. optilete	—	24♂(1) 24♀(1)	—	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
L. phlaeas	---	24♂(1,11)	---	Lorković '41	Chrom. 2.
L. semiargus	---	24♀(1)	---	Federley '38	Hered. 24.
Lycaeides idas	19-24s	9-13♂(1)	Number variable	Valle '48	Experientia 4.
Philotes vicrama	---	24♂(1)	---	Lorković '41	Chrom. 2.
Polyommatus amandus	---	24♂(1,11)	---	"	"
P. argyrognomon euergetes	---	"	---	"	"
P. argus	---	23♂(1,11)	---	"	"
P. bellargus	---	45♂(1,11)	---	"	"
P. coridon	---	90♂(1,11)	---	"	"
P. eros	---	23♂(1,11)	---	"	"
P. eumedon	---	24♂(1,11)	---	"	"
P. hylas	---	"	---	"	"
P. icarus	---	23♂(1,11)	---	"	"
P. idas armoricana	---	24♂(1,11)	---	"	"
P. idas croatica	---	24♂(1)	---	"	"
P. medon	---	24♂(1,11)	---	"	"
P. meleager	---	"	---	"	"
P. semiargus	---	"	---	"	"
P. thersites	---	"	---	"	"
Scolitantides orion	---	23♂(1,11)	---	"	"
Syntarucus telicanus	---	24♂(1)	---	"	"
Thecla pruni	---	23♂(1)	---	Beliajeff'30	Z.I.A.V. 54.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Zephyrus betulae	—	16(?)♀(1)	—	Federley '38	Hered. 24.
Lymantriidae					
Dasychira pudibunda	—	87♂(1,11)	—	Beliajeff '30	Z.I.A.V. 54.
D. selenitica	—	22♂(1) 44♂(1) (4n)	4n due to binucleate cells?	Federley '45	Soc. Sci. Fenn. Comm. Biol. 9.
Lymantria dispar	62s 62o	31♂(1,11) 31♀(1)	—	Seiler '14	A.Zf. 13.
"	—	31♂(1,11)	Size of chroms. differs by geographical races.	Goldschmidt '17, '20, '32	J.E.Z. 22; Z.I.A.V. 23; Roux. 126.
"	62s	"	Size of chroms. similar in different races.	Yoshida & Makino '45	Cyt. 14.
L. japonica	62s 62o	31♂(1,11) 31♀(1)	Seiler '14		A.Zf. 13.
L. monacha	"	"	—	Seiler & Haniel '21	Z.I.A.V. 27.
Orgyia antiqua	—	14♀(1,11)	—	Seiler '14	A.Zf. 13.
"	—	14♂(1,11)	—	Cretschmar '28	Z.Z.M.A. 7.
O. ericae	—	30♂(1,11)	—	Cretschmar '28	Z.Z.M.A. 7.
O. gonostigma	—	30♀(1,11)	—	Seiler '14	A.Zf. 13.
"	—	30♂(1,11)	—	Cretschmar '28	Z.Z.M.A. 7.

Species	Chromosome Number 2n	n	Remarks	Observer	References
O. leucostigma	---	28♂(1,11)	---	Cretschmar '28	Z.Z.M.A. 7.
O. thyellina	22s	11♂(1,11)	---	"	"
O. antiqua ♀ O. thyellina ♂	25s	15♂(1,11)	Variation of chrom. number occurs in I- & II-div.	"	"
Porthesia similis	---	23♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
Noctuidae					
Acronycta psi.	---	31♂(1)	---	Beliajeff '30	Z.I.A.V. 54.
"	---	"	---	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.
Agrotis triangulum	---	29♂(1,11)	---	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
Euplexia lucipara	---	31♂(11)	---	Beliajeff '30	Z.I.A.V. 54.
Halias prasinana	---	32♂(1)	---	"	"
Hypena proboscidalis	---	31♂(1)	---	"	"
Leucania impura	---	31♂(1,11)	---	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
Mamestra perciearlae	---	31♂(1)	---	Beliajeff '30	Z.I.A.V. 54.
Ochris ochracea	---	31♂(1)	---	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.
Orthosia circellaris	---	30♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
Xylina ingrica	---	31♂(1,11)	---	"	"
Zale sp.	---	31♂(1)	---	Smith '44	Sci.Agric. 24.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Notodontidae					
Cerura bifida	---	49♂(1,11)	---	Federley '28	Z.I.A.V. Sup. 1.
C. furcula	—	29♂(1,11)	---	"	"
Dicranura erminea	56s	28♂(1,11)	—	Federley '15, '43	Ofr. Finsk. Vetensk. Soc. Förhand 56; Hered. 29.
D. vinula	---	21♂(1)	—	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
"	—	21♂(1,11)	—	Federley '15	Ofr. Finsk. Vetensk. Soc. Förhand 56.
D. vinula germanica	---	21♂(1,11) 21♀(1)	Parth. race occurs.	Federley '43	Hered. 29.
D. vin. fennica	42m	21♂(1,11) 21♀(1,11)	20, 22 ♂ (1)occur.	"	"
D. vin. albanica	---	20♂(1,11) 20♀(1)	19,21,22 (1)occur.	"	"
D. vin. delavoiei	62m	31♀(1)	—	"	"
D. erminea x D. vinula	---	27,29-46, 49-52,56-59,64♂(1) 33-40♂(11)	—	"	"
D. erm. x (erm. x vin.)	---	32,34-47 ♂(1) 37-46 ♂(1,11)	---	"	"
D. vin. delav. x D. vin. fen.	52s	20-34♂(1) 21-26,28 ♂(11) 19-24,26 ♀(1)	21♂(1), 23♂(11) most common	"	"
D. vin. arctica x D. vin. germ.	---	21♀(1)	n,21 prob. in arctica	"	"
D. vin. fen. x D. vin. germ.	40,41, 42m	19,20,21,22 ♂(1,11) 20♀(11)	n,20,21 common. 42♂(1,11) occur.	Federley '43, '45	Hered. 29; Soc. Sci. Fenn. Comm. Biol. 9.

Species	Chromosome Number 2n	Chromosome Number n	Remarks	Observer	References
D. vin. germ. x D. vin. fen.	42m	21♂(1) 20,21♀(11)	20♀(11) common	Federley '43	Hered. 29.
D. vin. alb. x D. vin. germ.	40m	19♀(1,11)	---	"	"
Lophopteryx camelina	---	31♂(1)	---	Beliajeff '30	Z.I.A.V. 54.
Odoutosia camelina	---	"	---	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.
Phalera bucephala	---	30♂(1) 12-14♂(11)	---	Platner '86	Inter. Monat. Anat. Phis. 3.
"	Ca 60	---	---	Kernewitz '15	Arch. Naturges. 81.
"	---	31♂(1)	---	Rengart '30	Proc. Univ. Durham. Phil. Soc. 9.
Pygaera anachoreta	---	30(31)♂(1) 30♂(11)	---	Federley '13	Z.I.A.V. 9.
P. curtula	48m	29♂(1,11) 29♀(1)	---	Federley '13, '30	Z.I.A.V. 9; Z.Z.M.A. 12.
P. pigra	46s,m	23♂(1,11) 23♀(1)	---	"	"
"	42,46s	23♂(1,11) 46♂(1,11) 47♂(11)	Number varies from 22 to 39 in (1), due to non-disjunction.	Federley '42	Act. Zool. Fenn. 35.
P. pigra x P. curtula	58m	38-52 ♂ (1,11) 26-30 ♀ (1)	F_1 = picu	Federley '30, '45	Z.Z.M.A. 12; Arch. Jul. Klaus-Stif. Vererb. 20.
P. curtula x P. pigra	---	44-52 ♂ (1,11) 29♀(1,11)	F_1 = cupi	Federley '30	Z.Z.M.A. 12.
P. pigra x picu	64-65(69?)m	45-57♂(1) 45-52♂(11) 39-47♀(1)	---	"	"
P. curtula x picu	---	45-52(47-48) ♂(1) 44-49♀(1)	---	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pygaera curtula x cupi	---	43-51(46-47) ♂(1)	---	Federley '30	Z.Z.M.A. 12.
cupi x P. curtula	55m	41-43♂(1) 32-47(40) ♂(11) 27-30(29) ♀(1)	---	"	"
cupi x P. pigra	47-51(52)m	29-35♂(1) 29-34♂(11)	---	"	"
P. pigra ♀ x (P. pigra x picu) ♂	---	50-73(52) ♂(1)	---	"	"
(cupi x P. pigra) ♀ x P. pigra ♂	---	23-26(26) ♂(1,11)	---	"	"
[(cupi x P. pigra) ♀ x P. pigra ♂] ♀ x P. pigra ♂	---	23♂(1)	---	"	"
(picu x P. pigra) ♀ x P. pigra ♂	---	24-28♂(1)	---	"	"
cupi ♀ x cupi ♂	77-81(81)m	---	---	"	"
picu ♀ x cupi ♂	29m	---	---	"	"
(curtula x picu) ♀ x cupi ♂	---	48-53♂(1)	---	"	"
picu x P. curtula	---	24-44♂(1)	---	Federley '45	Arch. Jul. Klaus-Stif. Vererb. 20.
P. curtula x picu	---	41-52♂(1) 29,57,59 ♀(1)	---	"	"
picu x P. curtula[2]	---	29-37♂(1) 43-49♀(1)	---	"	"
P. curtula x (picu x P. curt.)	---	40-53♂(1) 48-49♀(1)	---	"	"
P. curtula ♀ x P. anachoreta ♂	59(?)m	56-59(59) ♀(1,11)	---	Federley '13	Z.I.A.V. 9.
(curtula x anach.) ♂ x anachoreta ♀	89(?)m	50-54♂(1)	3n hybrid	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Nymphalidae					
Argynnis adippe	---	29♂(1,11) 28♀(1)	---	Federley '38	Hered. 24.
"	---	29♂(1,11)	---	Lorković '41	Chrom. 2.
A. aglaja	---	29♂(1,11) 29♀(1)	---	Federley '38	Hered. 24.
A. aphirape ossianus	---	28♀(1)	---	"	"
A. enphrosyne	---	31♂(1,11) 31♀(1)	---	"	"
"	---	31♂(1,11)	---	Lorković '41	Chrom. 2.
A. freija	---	31♂(1) 31♀(11)	---	Federley '38	Hered. 24.
A. frigga	---	31♀(1)	---	"	"
A. ino	---	12-13♂(1,11) 13-14♀(1)	---	"	"
A. lathonia	---	30♂(1,11) 30♀(1)	---	"	"
A. niobe	---	29♂(1,11) 28-29♀(1)	---	"	"
A. pales arsilache	---	30♂(11) 29-30♀(1)	---	"	"
A. paphia	---	29♂(1,11) 28♀(1)	---	"	"
A. selene	---	30♂(1,11) 30♀(1)	---	"	"
A. thore scandinavica	---	30♀(1)	---	"	"
Araschnia levana	---	31♂(1,11)	---	Lorković '41	Chrom. 2.
Limenitis camilla	---	30♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
L. populi	---	30♂(1) 30♀(1)	---	Federley '38	Hered. 24.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Melitaea athalia	---	31♂(1,11) 31♀(1)	---	Federley '38	Hered. 24.
M. aurinia	---	30♂(1,11)	---	Lorkovic '41	Chrom. 2.
M. cinxia	---	31♀(1)	---	Federley '38	Hered. 24.
M. iduna	---	"	---	"	"
M. maturna	---	31♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
"	---	31♀(1)	---	Federley '38	Hered. 24.
Neptis aceris	---	30♂(1,11)	---	Lorković '41	Chrom. 2.
Polygonia c-album	---	31♂(11)	---	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
"	---	31♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
"	---	31♂(1,11) 31♀(1)	---	Federley '38	Hered. 24.
Pyrameis atalanta	---	31♂(1,11) 31♀(1)	---	Federley '38, '42	Hered. 24, 28.
P. cardui	---	31♂(1,11)	---	Lorković '41	Chrom. 2.
Vanessa antiopa	---	30♂(1)	---	Stevens '06	Publ. Carnegie Inst. Washington 36.
"	---	31♂(1,11) 31♀(1)	---	Federley '38	Hered. 24.
V. polychloros	---	31♂(1,11)	---	Lorković '41	Chrom. 2.
V. ulticae	---	31♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
"	---	"	---	Federley '38	Hered. 24.
V. xanthomelas	---	"	---	Lorković '41	Chrom. 2.
Oecophoridae					
Depressaria nervosa	---	30♂(1)	---	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Papilionidae					
Ophisthograptis luteolata	—	31♂(1)	---	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.
Papilio machaon	---	"	---	"	"
"	---	30-33♂(1,11)	---	Federley '38	Hered. 24.
"	—	30♂(1,11)	---	Lorković '41	Chrom. 2.
P. alexanor	—	"	---	"	"
P. feisthameli	—	"	---	"	"
P. podalirius	54-58s	---	---	Kernewitz '15	Arch. Naturges. 81.
"	---	30♂(1)	---	Regnart '30	Proc. Univ. Durham. Phil. Soc. 9.
"	---	30♂(1,11)	---	Lorković '41	Chrom. 2.
P. rutulus	28s	28♂(1,11)	14(tid)	Munson '07	Proc. Boston Soc. Nat. Hist. 33.
Parnassius apollo	---	30♂(1,11) 30♀(1)	---	Federley '38	Hered. 24.
"	—	30♂(1,11)	---	Lorković '41	Chrom. 2.
P. mnemosyne	---	29♀(1)	---	Federley '38	Hered. 24.
Zerynthia polyxena	---	31♂(1,11)	---	Lorković '41	Chrom. 2.
Pieridae					
Aporia crataegi	---	25♂(11)	—	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
"	---	"	---	Beliajeff '30	Z.I.A.V. 54.
"	---	25-26♂(1) 25♂(11) 25-26♀(1)	---	Federley '38	Hered. 24.
"	---	26♂(1,11)	---	Lorković '41	Chrom. 2.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Colias croceus	---	31♂(1,11)	---	Lorković '41	Chrom. 2.
C. edusa	---	31♀(1)	---	Federley '42	Hered. 28.
C. palaeno	---	31-32♂(1,11) 31♀(1)	A large element occurs in♀(1).	Federley '38, '42	Hered. 24, 28.
C. hecla sulitelma	---	31♀(1)	---	"	"
C. hyale	---	31♂(1) 31,32♀(1)	4 elements fused in ♀(1).	Federley '42	Hered. 28.
"	---	31♂(1,11)	---	Lorković '41	Chrom. 2.
C. nastes B.v. Werdandi	---	31♀(1)	---	Federley '42	Hered. 28.
Euchloe cardamines	---	31♂(1,11) 30-32♀(1)	---	Federley '38	Hered. 24.
"	---	31♂(1,11)	---	Lorković '41	Chrom. 2.
E. crameri romana	---	"	---	"	"
E. crameri occidentalis	---	"	---	"	"
Gonepteryx rhamni	---	31♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
"	---	31-32♂(1,11) 31(?)♀(1)	---	Federley '38	Hered. 24.
"	---	31,32♂(1,11)	---	Lorković '41	Chrom. 2.
Leptidia duponcheli	---	104♂(1)	---	Lorković '41	Chrom. 2.
L. morsei	---	54♂(1)	---	"	"
L. sinapis	---	26-41♂(1)	---	"	"
"	---	26-27♂(1) 28♂(11) 30-31(?)♀(1)	--- ---	Federley '38	Hered. 24.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pieris brassicae	28s 28o	14-15♂(1) 14♀(1,11)	---	Henking '90, '91, '92	Monats. Anat. Phys. 7; Z.W.Z. 51, 54.
"	30s 30o	15♂(1,11) 15♀(1)	---	Doncaster '12	Proc. Camb. Phil. Soc. 16.
"	---	15♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
"	---	15♂(1,11) 15♀(1)	---	Federley '38	Hered. 24.
"	---	15♂(1,11)	---	Lorković '41	Chrom. 2.
P. brassicae azorensis	---	15♀(1)	---	Federley '42	Hered. 28.
P. daplidicae	---	26♂(1,11)	---	Lorković '41	Chrom. 2.
P. ergane	---	"	---	"	"
P. manni	---	25♂(1,11)	---	"	"
P. napi	50(?)s	25♂(1)	---	Henking '90	Z.W.Z. 49.
"	---	25♂(1,11) 23♀(1)	---	Federley '38	Hered. 24.
"	---	25♂(1,11)	---	Lorković '41	Chrom. 2.
P. napi bryoniae	---	"	---	"	"
P. rapae	---	25♂(1)	---	Beliajeff '30	Z.I.A.V. 54.
"	---	26♂(1,11) 26♀(1)	---	Federley '38	Hered. 24.
"	---	25♂(1,11)	---	Lorković '41	Chrom. 2.
Plutellidae					
Cerostoma nemorellum	---	34♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
Psychidae					
Fumea casta	62s 61o	31♂(1,11) 30,31♀	X-X♂, X-O♀	Seiler '17 '21, '23	Z.I.A.V. 18; A.Zf. 16; Z.I.A.V. 31.
Pyralidae					
Chiro simplex	58s	29♂(1,11)	---	Kurihara '29	Jour. Coll. Agri. Imp. Univ. Tokyo 10.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ephestia kuehniella	—	29♂(1,11)	—	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
"	—	30♀(1,11)	—	Fogg '30	J.M. 50.
"	—	30♂(1,11) 30♀(1) 29,30♀(11)	X-O♀	Wagner '30	Z.Z.M.A. 12.
Galleria melonella	Ca 60	30♂(1)	—	Kernewitz '14	A.Zf. 12.
Sylepta ruralis	—	31♂(1)	—	Beliajeff '30	Z.I.A.V. 54.
Saturnidae					
Antherea pernyi	—	33(34)♂(11)	—	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
"	—	49♂(1,11)	—	Kawaguchi '33, '34	Z.M.(Jap.) 45; Jap. J.G. 10.
"	—	49♂(1)	—	Kadota '21	Z.M. (Jap.) 33.
A. yamamai	—	31♂(1,11)	—	Kawaguchi '33, '34	Z.M. (Jap.) 45; Jap. J.G. 10.
A. pernyi ♀ x A. yamamai	—	68-69♂(1,11) (60-63-80)	Sterile in F_1, due to irregular meiosis.	"	"
Automeris io	—	31♂(1,11)	—	Cook '10	Proc. Nat. Acad. Philadel. 62.
Callosamia promethea	38s	19♂(1,11)	—	"	"
Dictyoploca japonica	—	31♂(1,11)	—	Oba '42	Bot. & Zool. (Tokyo) 10.
Philosamia cynthia	26s 26♂,♀m	13♂(1,11) 13♀(1,11)	Number varies 12-14(n). 4n cytes (n,28) occur.	Dederer '07, '15, '28	B.B. 13; J.M. 26, 45.
P. cynthia walkeri	26s	13♂(1,11)	—	Kawaguchi '37	Cyt. Fujii-Jub. Vol.

Species	Chromosome Number 2n	n	Remarks	Observer	References
P. cynthia pryeri	28s	14♂(1,11)	—	Kawaguchi '37	Cyt. Fujii-Jub. Vol.
P. cynthia ricini	—	14♂(1,11)	—	Koga '39	Bot. & Zool. (Tokyo) 7.
"	—	14♂(1)	—	Yamashita '39	Rep. Agr. Exp. St. Taiwan.
P. cynthia	—	13♂(1,11)	—	Dederer '40	J.M. 67.
P. cynthia pryeri	—	14♂(1,11)	4n cytes occur.	Oba '42	Bot. & Zool. (Tokyo) 10.
P. cynthia walkeri x P.c. pryeri	—	12♂(1) 12,13,14♂(11)	2 chrom. chains occur.	Kawaguchi '37	Cyt. Fujii-Jub. Vol.
Samia cecropia	—	30♂(1,11)	—	Cook '10	Proc. Nat. Acad. Philadel. 62.
Saturnia pavonia	—	29♂(1,11)	—	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
"	—	29♂(1)	—	Pariser '27	Z.Z.M.A. 5.
S. pyri	—	30♂(1)	—	"	"
S. pyri x S. pavonia	—	45-51♂(1)	—	"	"
(Saturnia pyri x S. pavonia) ♀ x S. pavonia ♂	88(?)m	Ca 45♂(11)	3n hybrid, intersex.	"	"
Telea polyphemus	60s	30♂(1,11)	—	Cook '10	Proc. Nat. Acad. Philadel. 62.
Satyridae					
Aphantopus hyperauthus	—	29♀(1)	—	Federley '38	Hered. 24.
Coenonympha arcana	—	32♂(1,11)	—	Lorković '41	Chrom. 2.
C. iphis	—	29♀(1)	—	Federley '38	Hered. 24.
C. pamphilus	—	29♂(1) 28,29♀(1)	—	"	"
C. tiphon	—	29♀(1)	—	"	"
C. tiphon occupata	—	29♂(1,11)	—	Lorković '41	Chrom. 2.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Epinephele jurtina	---	29♂(1) 29♀(1)	---	Federley '38	Hered. 24.
"	---	29♂(1,11)	---	Lorković '41	Chrom. 2.
Erebia aethiops	---	21♂(1)	---	"	"
E. disa	---	29♀(1)	---	Federley '38	Hered. 24.
E. epiphron cassiope	---	17♂(1)	---	Lorković '41	Chrom. 2.
E. glacialis	---	19♂(1)	---	"	"
E. gorge	---	21♂(1)	---	"	"
E. lappona	---	28♀(1)	---	Federley '38	Hered. 24.
E. ligea	---	29♀(1)	---	"	"
E. medusa polaris	---	11♀(1)	---	"	"
E. medusa	---	11♂(1)	---	Lorković '41	Chrom. 2.
E. melas	---	21♂(1)	---	"	"
E. nerine	---	22♂(1)	---	"	"
E. oëme	---	14♂(1)	---	"	"
E. ottomana	---	40♂(1)	---	"	"
E. pharte	---	19♂(1)	---	"	"
E. pronoë	---	19♂(1)	---	"	"
Melanargia galathea	---	24♂(1)	---	"	"
M. lachesis	---	24♂(11)	---	"	"
Oeneis jutta	---	32♀(1)	---	Federley '38	Hered. 24.
Pararge aegeria aegerides	---	28♂(1) 28♀(1)	---	"	"
P. hiera	---	29♂(11) 29♀(1)	---	"	"
P. maera	---	28♂(1,11) 28♀(1,11)	---	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
P. maera adrasta	—	28♂(1,11)	—	Lorković '41	Chrom. 2.
P. maera pannonica	—	"	—	"	"
P. megaera	—	29♂(1,11)	—	"	"
P. megaera lyssa	—	"	—	"	"
Satyrus hermione	—	"	—	"	"
S. semele	—	29♂(1,11) 29♀(1)	—	Federley '38	Hered. 24.
Sphingidae					
Chaerocampa elpenor	—	29♂(1,11)	—	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
"	—	29♂(1,11) 29♀(1)	—	Federley '16	Ofv. Finsk. Vetensk. Soc. Förhand 58.
C. porcellus	—	"	—	"	"
Deilephila euphorbiae	—	28-29♂(1)	—	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
"	28s	28♂(1,11) 14♀(tid)	—	Buder '17	A.Zf. 14
D. gallii	—	28♂(1,11)	—	Federley '28	Z.I.A.V. Sup. 1.
Dilina tiliae	—	29♂(1)	—	Federley '14	Ofv. Finsk. Vetensk. Soc. Förhand 56.
"	—	"	—	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
Smerinthus ocellata	—	27♂(1,11)	—	Federley '14	Ofv. Finsk. Vetensk. Soc. Förhand 56.
"	—	28♂(1,11)	—	Kernewitz '15	Arch. Naturges. 81.
"	—	27♂(1,11)	—	Beliajeff '30	Z.I.A.V. 54.
S. populi	—	28♂(1,11)	—	Federley '14, '15	Ofv. Finsk. Vetensk. Soc. Förhand. 56, 57.

Species	Chromosome Number 2n	n	Remarks	Observer	References
S. populi	---	28♂(1,11)	---	Beliajeff '30	Z.I.A.V. 54.
S. populi austauti ♀ x S. populi populi ♂	---	28-33♂(1) (29)	2-10 univalents	Federley '14, '15	Ofv. Finsk. Vetensk. Soc. Forhand 57.
S. ocellata ocel. ♀ x S. oc. planus ♂	---	36-49♂(1)	---	Federley '13, '14	Ofv. Finsk. Vetensk. Soc. Forhand 56.
S. populi ♀ x S. ocellata ♂	---	50-52♂(1)	---	"	"
S. ocellata ♀ x Dilina tiliae ♂	---	---	Pairing of chroms. lacking in F_1.	"	"
Sphinx ligustri	---	27-29♂(1)	---	Kernewitz '14, '15	Z.A. 45; Arch. Naturges. 81.
Talaeporiidae					
Solenobia alpicolella	60-62	---	2n race	Seiler '45	Arch. Jul. Klaus.-Stift. Vererb. 20.
	Ca 93	31 (trivalent)	3n, intersex		
S. lichenella (?)	---	120♀(11)	4n? (Parth.)	Nabel '48	Arch. Jul. Klaus.-Stift. Vererb. 23.
S. pineti	61,62,63s 61,62,63o	30,31,32♂(1) 30,31,32♀(1)	---	Seiler '22	A.Zf. 16.
S. pieni	120♀m (Parth.)	30♀(1) 60♀(11)	60 in anaphase, ♀(1).	Seiler '24	Z.I.A.V. 31.
S. triquetrella	62♂m	---	2n; bisexual race	Seiler '27 a,b, '29, '38, '42, Seiler & Schaffer '41.	Z.I.A.V. 31; B. Zbl. 47; Roux 119; R. Suisse Z. 45; Arch. Jul. Klaus.-Stift. Vererb. 17; R. Suisse Z. 48.
	62♀m	31♀(1)	2n; parth. race		
	124♀m	62♀(1)	4n; parth. race		
Bisex. ♂ x Parth. ♀.	90,120,240m	---	intersex. From correction of '41 & '42.		

Species	Chromosome Number 2n	n	Remarks	Observer	References
Talaeporia tubulosa	60♂m 59♀m	30♂(1,11) 30♀(1) 29,30♀(11)	X-X♂, X-O♀	Seiler '17, '21, '24	Z.I.A.V. 18; A. Zf. 16; Z.I.A.V. 31.
Tischeriidae					
Tischeria angusticolella	42s 42o	21♂(1,11) 21♀(1)	---	Knaben '34	Z.Z.M.A. 21.
Tortricidae					
Cacoecia cerasivorana	---	30♂(1,11)	---	Stevens '06	Publ. Carnegie Inst. Washington 36.
Cacoecia cerasivorana (Archips cerasiv.)	---	30♂(1)	---	Smith '44	Sci. Agric. 24.
C. (A.) fumiferana	---	"	---	"	"
Homona menciana	---	30♂(1,11) (27-29)	---	Shibata '30	Trans. Nat. Hist. Soc. Taiwan 20.

COLEOPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
ADEPHAGA					
Carabidae					
Anomoglossus emarginatus	---	19♂(1) 18,19♂(11)	X-O♂	Stevens '06	Carnegie Inst. Publ. 36.
Anthia sexguttata	35s	18♂(1) 17,18♂(11)	"	Asana, Makino & Niiyama '42	Cyt. 12.
Chalenius aestivus	---	17♂(1)	X-Y♂	Stevens '06	Carnegie Inst. Publ. 36.
Ch. pennsylvanicus	---	10♂(1)	"	"	"
Ch. pallipes	37s	19♂(1) 18,19♂(11)	X-O♂	Yosida '51	La Kromosomo 9.
Feronia anthracina	---	8♂(1)	---	Carnoy '85	L.C. 1.
F. nigerrima	---	---	---	"	"
Galerita bicolor	30s	---	X-Y♂	Stevens '06	Carnegie Inst. Publ. 36.
Harpalus griseus	8s	---	---	Carnoy '85	L.C. 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Palatinus sp.	37s	19♂(1) 18,19♂(11)	X-0♂	Yosida '51	La Kromosomo 9.
Procrustes cariacens	---	11,12♂(11)	X-Y♂	Carnoy '85	L.C. 1.
Silpha perforata	---	20♂(1)	X-0♂	Yosida '51	La Kromosomo 9.
Steropus madidae	---	---	---	Carnoy '85	L.C. 1.
Cicindellidae					
Cicindela ancocisconensis	22s	11♂(1)	X_1X_2-0♂,	Goldsmith '19	J.M. 32.
C. purpurea	24o	10,12♂(11)	X_1X_2-X_1		
C. repanda	24♀m		X_2?		
C. sexguttata					
C. vurgaris					
C. primeriana	20s	10♂(1,11)	X-Y♂	Stevens '06	Carnegie Inst. Publ. 36.
C. vulgaris	22s	---	X_1X_2-Y♂	Stevens '09	J.E.Z. 6.
Dytiscidae					
Colymbetes fuscus	35-37o	---	---	Gunthert '10	Z. Jb. 30.
Cybister roeselii	Ca 22s	11-15♂(1) 12♂(11)	6(tid)	Voinov '03	A.Z.E.G. 1.
Dytiscus circumcinctus	38s	19♂(1,11)	X-Y♂	Schäfer '07	Z. Jb. 23.
D. marginalis	Ca 40 (36-41)s	---	---	Henderson '07	Z.W.Z. 87.
"	38s	19♂(1,11)	2X♂(?)	Schäfer '07	Z. Jb. 23.
"	"	"	---	Debaisieux'09	L.C. 25.
Dytiscus sp.	Ca 40o, ♀m	---	---	Giardina '01	Int. Monat. Anat. Phys. 18.
POLYPHAGA					
Bruchidae					
Bruchus quadrimaculatus	19s 19,20♂m 20♀m	10♂(1) 9,10♂(11)	X-0♂	Brauer '28	J.M. 46.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Zabrotes Subfasciatus	26s	13,14♂(1) 12,13,14♂(11) 13,14♀(11) 13♀(11)	X-0♂, X-X♀. 1 supernumerary occurs.	Minouchi '35	Z.Z.M.A. 23.
Buprestidae					
Agrilus anxius	22 s,♀	11♂(1,11)	X-Y♂, X-X♀	Smith '49	Evolution 3.
Euchroma gigantea	---	13♂(1)	X-Y♂	Nichols '10	B.B. 19.
Julodis whithilli	24s	12♂(1,11)	X-0♂. X fused with 1 autosome.	Asana, Makino & Niiyama '42	Cyt. 12.
Spruce-borer I	---	10♂(1,11)	X-Y♂. sp. name unknown.	Stevens '06	Carnegie Inst. Publ. 36.
Spruce-borer II	---	11♂(1)	"	"	"
Sternocera laevigata	26s	13♂(1,11)	X-0♂. X fused with 1 autosome.	Asana, Makino & Niiyama '42	Cyt. 12.
S. nitidicolis	"	"	"	"	"
Cantharidae (=Lampyridae)					
Ellychnia corrusca	19s	---	X-0♂	Stevens '06, '09	Carnegie. Inst. Publ. 36; J.E.Z. 6.
Lamoyrus splendidula	---	6-8♀(1,11)	---	Henking '92	Z.W.Z. 54.
Photinus consanguineus	19s,♂m 20♂,♀m	10♂(1,11)	X-0♂	Stevens '09	J.E.Z. 6.
P. pennsylvanicus	19s,♂m 20♂	"	"	"	"
Cerambycidae					
Cylene robinia	20s	10♂(1)	X-Y♂	Stevens '09	J.E.Z. 6.
Obera tripunctata	---	---	X-Y♂	"	"
Pterolophia caudata	20s	10♂(1,11)	X-Y♂	Yosida '49, '51	Abstr. Sci. Res. 2; La Kromosomo 9.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Tetraopes femoratus	20s	10♂(1,11)	X-Y♂	Snyder '34	Proc. Penn. Acad. Sci. 8.
T. tetraophthalmus	"	"	"	Stevens '09	J.E.Z. 6.
"	"	"	"	Snyder '34	Proc. Penn. Acad. Sci. 8.
Chrysomelidae					
Adimonia tanaceti	---	Ca 12♀(1)	---	Henking '92	Z.W.Z. 54.
Agelastica alni	24-25s 24-30m	Ca 12♂(1,11)	---	"	"
A. caerulea	24s	12♂(1,11)	X-Y♂	Yosida '44	Jap. J.G. 20.
Argopus orientalis	---	25♂(1,11)	"	Yosida '49, '51	Abstr. Sci. Res. 2; La Kromosomo 9.
Blepharida rhois	---	16♂(1,11)	X-Y♂	Stevens '06	Carnegie Inst. Publ. 36.
Chelymorpha argus	22s 22♀m	11♂(1,11)	X-Y♂ X-X♀	"	"
Chrysochus auratus	---	13♂(1)	X-Y♂	Stevens '09	J.E.Z. 6.
Chrysomela similis	---	12♂(1) 11,12♂(11)	X-O♂	"	"
Ch. exanthematica	23s	12♂(1)	X-O♂	Yosida '44	Jap. J.G. 20.
Cootocycla aurichalcea	22s	11♂(1,11)	X-Y♂	Nowlin '06	J.E.Z. 3.
C. clavata	18s	---	"	Stevens '09	J.E.Z. 6.
C. guttata	"	9♂(1,11)	"	Nowlin '06	J.E.Z. 3.
Crioceris asparagi	---	8♀(1,11)	---	Henking '92	Z.W.Z. 54.
Diabrotica 12-punctata	19s	(10♂(1) (9,10♂(11)	X-O♂. Number varies due to. 1-4 supernumeraries.	Stevens '08	J.E.Z. 5.
D. soror	20s	(11,♂(1) (9,10,11♂(11)			
	21s	(12♂(1) (9-12♂(11)			
		13♂(1) 9-13♂(11) 9-14♂(11)			

Species	Chromosome Number 2n	n	Remarks	Observer	References
D. vittata	21s	11♂(1) 10,11♂(11)	X-0♂	Stevens '08	J.E.Z. 5.
"	21,22m	---	---	Hoy '14	B.B. 27.
Donacia sp.(Sericea?)	---	15♀(1)	—	Henking '92	Z.W.Z. 54.
Doryphora clivicolis	---	17♂(1,11)	X-Y♂	Stevens '09	J.E.Z. 6.
D. decemlineata	36s	18♂(1,11)	—	Stevens '06	Carnegie Inst. Publ. 36.
Haltica chalybea	22s	11♂(1)	X-Y♂	Stevens '09	J.E.Z. 6.
Lema trilineata	32s	16♂(11)	X-Y♂	"	"
Leptinotarsa signaticolis	34s	17♂(1) 16,17♂(11)	2X-0♂(?)	Wieman '10	J.M. 21.
Lina laponica	---	17♂(1)	X-Y♂	Stevens '09	J.E.Z. 6.
Luperoides praeustus	32s 32o	16♂(1)	X-0♀; Multiple-X	Yosida '44, '49, '51	Jap. J.G. 20; Abstr. Sci. Res. 2; La Kromosomo 9.
Melasoma aenea	---	17♂(1,11)	X-Y♂	Yosida '49, '51	Abstr. Sci. Res. 2; La Kromosomo 9.
M. populi	32s	16♂(1,11)	"	"	"
Odontota dorsalis	16s,♂m	8♂(1,11)	X-Y♂. Y=2 elements?	Stevens '06	Carnegie Inst. Publ. 36.
Rhaphidopolpa femoralis	---	29♂(1,11)	X-Y♂	Yosida '49, '51	Abstr. Sci. Res. 2; La Kromosomo 9.
Trirhabda canadense	30s 30♀m	15♂(1,11)	X-Y♂ X-X♀	Stevens '06	Carnegie Inst. Publ. 36.
T. virgata	28s,♂m 28♀m	14♂(1,11)	X-Y♂ X-X♀	"	"
Coccinellidae					
Adalia bipunctata	20s	10♂(1,11)	X-Y♂	Stevens '06	Carnegie Inst. Publ. 36.
Calvia 14-guttata	20s	10♂(1,11)	X-Y♂	Yosida '44	Jap. J.G. 20.
Coccinella bruckii	---	10♂(1,11)	---	Toshoika & Yamamoto'37	Bot. & Zool. (Tokyo) 5.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Coccinella bruckii	18s	9♂(1,11)	X-Y♂	Yosida '44	Jap. J.G. 20.
C. crotchi	20s	10♂(1,11)	X-Y♂	Yosida '44	Jap. J.G. 20.
Coelophola inaequalis	"	"	"	Yosida '49, '51	Abstr. Sci. Res. 2; La Kromosomo 9.
Coccinellidae	20s	10♂(1,11)	X-Y♂, name unknown.	Stevens '09	J.E.Z. 6.
Epilachna borealis	18s	9♂(1,11)	X-Y♂	Stevens '06	Carnegie Inst. Publ. 36.
"	18m	---	"	Hoy '18	B.B. 35.
E. chrysomelina x E. capensis	18m	---	---	Strasburger '36	Z.I.A.V. 71.
E. pustulosa	20s	10♂(1,11)	X-Y♂	Yosida '48	Matsumushi 2.
E. vigintioctomaculata =(niponica)	"	"	"	Yosida '44, '48	Jap. J.G. 20: Matsumushi 2.
E. vigintioctomaculata	---	9♂(1)	---	Toshioka & Yamamoto '37	Bot. & Zool. (Tokyo) 5.
E. vigintioctopunctata	20s	10♂(1,11)	X-Y♂	Yosida '48	Matsumushi 2.
Harmonia axyridis	16s	8♂(1,11)	X-Y♂	Li '40	Peking Nat. Hist. Bull. 15.
"	"	"	"	Yosida '44	Jap. J.G. 20.
Hippodamia tredecim-punctata	20s,o, ♀m	10♂(1,11)	"	Yosida '44, '49, '51	Jap. J.G. 20; Abstr. Sci. Res. 2; La Kromosomo 9.
Ithone mirabilis	17s	9♂(1)	---	Toshioka & Yamamoto '37	Bot. & Zool. (Tokyo) 5.
"	20o	---	---	Yosida '49, '51	Abstr. Sci. Res. 2; La Kromosomo 9.
Propylaea japonica	---	10♂(1,11)	X-Y♂	"	"
Synonycha grandis	20s,o	"	X-Y♂; 20 Univalents without synapsis occur in I-M.	Yosida '44, '46	Jap. J.G. 20; Seibutu 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Cucujidae					
Oryzaephilus surinamensis	Ca13-14s	7♂(1,11)	---	McMullen '28	A.N. 62.
Curculionidae*					
Acanthoscelides obtectus	20♀m	10♂(1)	—	Bushnell'36	J.M. 60.
Calandra oryzae	12o,♀m	---	---	Tiegs & Murray '38	Q.J.M.S. 80.
Episomus turitus	---	9♂(1)	—	Toshioka & Yamamoto '37	Bot. & Zool. 5.
Phytonomous punctata	—	---	X-Y♂	Stevens '09	J.E.Z. 6.
Hylobius abietis	---	11♂(1)	X-O♂. 2n bisexual sp.	Suomalainen '40a,b.	Hered. 26; Ann. Acad. Sci. Fenn. Ser. A. 5.
Otiorrhynchus arcticus	22s	11♂(1,11) 11♀(1)	X-Y♂. 2n bisexual sp.	"	"
O. armadillo	22s,o	11♂(1,11) 11♀(1)	X-Y♂, X-X♀. 2n bisexual sp.	Suomalainen '47,'49	Hered. 33; Ann. Ent. Fenn. 14.
O. austriacus	22o	---	"	"	"
O. bisulcatus	22s,o	11♂(1,11) 11♀(1)	"	"	"
Otiorrhynchus chrysops	22o	—	"	"	"
O. equestris	22s	11♂(1,11)	"	"	"
O. fuscipes	"	"	"	"	"
O. gemmatus	22s,o	11♂(1,11) 11♀(1)	"	"	"

*Parthenogenetic, polyploid species of Curculionidae were arranged in the order of the chromosome number.

Species	Chromosome Number 2n	Chromosome Number n	Remarks	Observer	References
O. geniculatus	22s,o	11♂(1,11) 11♀(1)	X-Y♂, X-X♀. 2n bisexual sp.	Suomalainen '47, '49	Hered. 33; Ann. Ent. Fenn. 14.
O. inflatus	22s	11♂(1,11)	"	"	"
O. morio	22s,o	11♂(1,11) 11♀(1)	"	"	"
O. niger	"	"	"	"	"
O. salicis	"	"	"	"	"
O. sensitivus	"	"	"	"	"
Polydrosus pilosus	"	11♂(1,11)	"	Suomalainen '40a,b.	Hered. 26; Ann. Acad. Sci. Fenn. Ser. A, 5.
P. undatus	---	11♀(1)	2n bisexual sp.	"	"
Strophosmus capitatus (S. rufipes capitatus)	21s 22♀m	11♂(1) 10,11♂(11) 11♀(1,11)	X-O♂. 2n bisexual sp.	"	"
Polydrosus mollis	22o	22♀(1)	2n parth. species. 1 meiotic div. and chroms. unreduced in eggs.	Suomalainen '40a,b, '49.	Hered. 26; Ann. Acad. Sci. Fenn. Ser. A. 5; Ann. Ent. Fenn. 14.
Otiorrhynchus ovatus	---	30-34♀(1)	3n parth. species. 1 meiotic div. and chroms. unreduced in eggs.	"	"
O. ligustici	---	31-35♀(1)	"	"	"
O. gemmatus	33♀m	33♀(1)	" (Austrian Alps)	Suomalainen '45, '47, '49	Sitz. Finn. Akad. Wiss. 1944: Hered. 33; Ann. Ent. Fenn. 14.

Species	Chromosome Number 2n	n	Remarks	Observer	References
O. niger	33♀m	33♀(1)	" (Austrian Alps)	Suomalainen '45, '47, '49	Sitz. Finn. Akad. Wiss. 1944: Hered. 33; Ann. Ent. Fenn. 14.
O. salicis	"	"	" (")	"	"
O. scaber	"	"	" (")	"	"
O. sigularis	"	"	" (Helsinki)	"	"
O. sulcatus	"	"	" (")	"	"
"	"	"	"	Seiler '47	Chrom. 3.
Sciaphilus asperatus	"	"	"	Suomalainen '40, '47, '49	Hered. 26, 33; Ann. Ent. Fenn. 14.
Strophosomus melanogrammus	"	"	"	"	"
Trachyphloeus bifoveolatus	---	32-33♀(1)	"	Suomalainen '40a,b, '49	Hered. 26; Ann. Acad. Sci. Fenn. Ser. A, 5; Ann. Ent. Fenn. 14.
Barynotus obscurus	---	44♀(1)	4n parth. Species. 1 meiotic div. and chroms. unreduced in eggs.	"	"
Otiorrhynchus dubius	---	44♀(1)	"	"	"
O. scaber	44♀m	42-44♀(1)	"	"	"
Otiorrhynchus pupillatus	44♀m	---	" (Austr. Alps)	Suomalainen '47, '49	Hered. 33; Ann. Ent. Fenn. 14.
Barynotus moerens	55♀m	---	5n parth. sp. (")	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Elateridae					
Elater sp. (I)	19s 20o	10♂(1)	X-O♂	Stevens '06	Carnegie Inst. Publ. 36.
Elater sp. (II)	19s	"	"	"	"
Linoneus griseus	17s	9♂(1) 8,9♂(11)	"	"	"
Hydrophilidae					
Hydrophilus piceus	---	10-12♂(1) 5-6♂(11)	—	Carnoy '85	L.C. 1.
"	16s	16♂(1) 8♂(11)	---	Vom Rath '92	A.M.A. 40.
"	30s,♂m	15♂(1,11)	—	Arnold '08	A. Zf. 2.
Hydrous acuminatus	30s	"	X-Y♂	Asana, Makino & Niiyama '42	Cyt. 12.
Lucanidae					
Paslidoremus inclinatus	19s	10♂(1) 9,10♂(11)	X-O♂	Toshioka & Yamamoto '37	Bot. & Zool. 5.
Melandryidae					
Penthe obliquata	16s	8♂(11)	X-Y♂	Stevens '09	J.E.Z. 6.
Meloidae					
Epicauta cinerea	20s	10♂(1,11)	X-Y♂	Stevens '09	J.E.Z. 6.
Epicauta pennsylvanica	20s	10♂(1,11)	X-Y♂	Stevens '09	J.E.Z. 6.
E. vermogloanica	"	"	"	"	"
Meloe sp.	"	"	"	Asana, Makino & Niiyama '42	Cyt. 12.
Mylabiris pustulata	22s	11♂(1,11)	"	"	"
Micromalthidae					
Micromalthus debilis	10s 20♀ (Parth.)	10♂(1,11)	Monopolar in ♂ I, dipolar in II.	Scott '36	J.M. 59.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Passalidae					
Passalus cornutus	Ca 26s	13♂(1)	X-Y♂	Shaffer '17	B.B. 32.
Scarabaeidae					
Anomala rufocuprea	18s	9♂(1,11)	X-Y♂	Yosida '49	Trans. Sapporo Nat. Hist. Soc. 18.
A. corpulenta	"	"	"	"	"
Cotalpa lanigera	20s	10♂(1,11)	"	Shaffer '20	B.B. 38.
Euphoria inda	"	"	"	Stevens '06	Carnegie. Inst. Publ. 36.
Glycyphana fulvistemma	"	"	"	Yosida '49	Trans. Sapporo Nat. Hist. Soc. 18.
Lachnosterna delata	"	"	"	Shaffer '20	B.B. 38.
L. fusca	"	"	"	"	"
L. gracilis	"	"	"	"	"
L. tristis	"	"	"	"	"
Oryctes nasicornis	12s	6♂(1,11)	"	Prowazek '02	Arb. Zool. Inst. Wien. 13.
Pelidonata punctata	20s	10♂(1,11)	"	Shaffer '20	B.B. 38.
Phanacus carnifex	12s	6♂(1)	—	Hayden '25	J.M. 40.
P. igneus	"	"	—	"	"
Poppilia japonica	18s	9♂(1,11)	X-Y♂	Yosida '49	Trans. Sapporo Nat. Hist. Soc. 18.
Trichius fasciatus	20s	10♂(1,11)	"	"	"
Silphidae					
Silpha americana	40s	20♂(1,11)	X-Y♂	Stevens '06	Carnegie Inst. Publ. 36.
S. carinata	32s	16♂(1,11)	---	Holmgren '02	A.A. 22.
Necrophorus sayi	13s	7♂(1) 6,7♂(11)	X-0♂	Stevens '09	J.E.Z. 6.

Species	Chromosome Number 2n	n	Remarks	Observer	References
STAPHYLINIDAE					
Listotrophus cingulatus	26 s	13♂(1,11)	X-Y♂	Stevens '09	J.E.Z. 6.
Rove-beetle (Staphylinus sp.?)	28 s	14♂(1,11)	—	"	"
Staphylinus sp.	---	---	Digamety in ♂	Holmgren '01	A.A. 19.
S. violacens	---	22♂(1,11)	X-Y♂	Stevens '09	J.E.Z. 6.
TENEBRIONIDAE					
Akis bacarozzo	16 s	—	X-Y♂	Guénin '50	Arch. Jul. Klaus-Stift. Vererb. 25.
Blaps gigas	35 s 38 o	—	XX-Y♂	Guénin '49	Rev. Suisse Z. 56.
B. lusitanica	35(33)s	17♂(1) 17, 18♂(11)	X-O♂	Nonidez '14	Trans. Mus. Nac. Nat. Madrid, Zool. 18.
"	35 s	15/4X/Y♂(1) 16,19♂(11)	XXXX-Y♂	Nonidez '20	J.M. 34.
"	35 s	16♂(1) 16,19♂(11)	"	Wilson '25	The cell, 1925.
"	19 s 20 o	—	XX-Y♂	Guénin '49	Rev. Suisse Z. 56.
B. lethifera	37 s 38 o	—	"	"	"
B. mortisaga	36 s 37 o	17♂(1) 17,19♂(11)	XXX-Y♂	Guénin '48, '49	Experientia 4: Rev. Suisse Z. 56.
B. mucronata	36 s 38 o	—	XX-Y♂	Guénin '49	Rev. Suisse Z. 56.
B. walthi	34 s	19♂(1) 16,18♂(11)	X_1X_2-O♂(?)	Nonidez '15	Mem. Soc. Espan. Hist. Nat. 10.
Diaperis boleti	14 s	—	X-Y♂	Guénin '50	Arch. Jul. Klaus-Stift. Vererb. 25.
Elenophorus collaris	26 s	—	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pimelia bipunctata	18 s	---	X-Y♂	Guénin '50	Arch. Jul. Klaus-Stift. Vererb. 25.
Tenebrio molitor	20 s 20 o, ♀m	10♂(1,11)	X-Y♂ X-X♀	Stevens '06	Carnegie Inst. Publ. 36.
"	20 s	---	X-Y♂	Guénin '50	Arch. Jul. Klaus-Stift. Vererb. 25.
T. obscurus	"	---	"	"	"
Tentyria mucronata	"	---	"	"	"

STREPSIPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Acroschismus wheeleri	16 s 16 o, m	8♂(1,11)	X-Y♂?	Hughes-Schrader '24	J.M. 39.

HYMENOPTERA*

Species	Chromosome Number 2n	n	Remarks	Observer	References
APIDAE					
Apis mellifica (Biene)	16 m	16♀(1) 8♀(11)	---	Petrunkewitsch '01, '03	Z. Jb. 14, 17.
Apis mellifica (Biene)	16 s	16♂(1,11)	---	Reves '03,'07	A.A. 24; A.M.A. 70.
" (Honey-bee)	---	"	---	Mark & Copeland '06	Proc. Am. Acad. Arts. Sci. 42.
"	16 o	16♂(1,11)	---	Doncaster '06, '07	A.A. 29, 31.
"	16 s, ♂m 32 o, ♀m	16♂(1,11) 16♀(1,11)	---	Nachtsheim '12, '13	Sitz. Ges. Morph. Phys. München, 12; A.Zf. 11.
"	16 o	32♀(1) 16♀(11)	---	Jegen '20	Zeits. Zschokke, Basel
Osmia cornuta	16 s 32, 64 m	16♂(1) 8♂(tid)	---	Armbruster '13, a,b	Ber. Nat. Ges. Freiburg, 20: A. Zf. 11.

*Greenshields (Nat. 137; 662, 1936.) (Not accessible.)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Xylocopa violacea v	16 s	16♂(1,11)	---	Granata '09, '13	Biologica 2; Monit. Zool. Ital. 24.
BRACONIDAE					
Apanteles glomeratus	---	12♀(1)	---	Hegner '15	J.M. 26.
Habrobracon juglandis (H. brevicornis)	11♂m 22♀m	---	---	Whiting, A.R. '27	B. B. 53.
"	10s 20o	10♂(1,11)	---	Magnhild '35	B.B. 68.
	20s (2n♂)	20♂(11)			
"	---	10♀(1.11)	---	Speicher '36	J.M. 59.
"	20o	10♀(1)	---	Speicher & Speicher '38	B.B. 74.
"	20 s (2n♂)	20♂(1)	---	Speicher & Speicher '40	A.H. 74.
Habrobracon pectinophorae	10s(n♂) 20s(2n♂) 20o(2n♀) 30o(3n♀)	---	2n♂ occur.	Inaba '39, '44	Cyt. 9; Jap. J.G. 20.
"	20s(2n♂) 40s(4n♂) 40o(4n♀)	---	Colchicine treatment	Inaba '39, '40, '41	Jap. J.G. 15, 16; Cyt. 12.
CHALCIDIDAE					
Ageniaspis fuscicollis	---	Ca 10♀(1)	---	Silvestri '08	Bol. R. Scuola Sup. Portici, 3.
"	---	8-12♀(1) 4♀(11)	---	Martin '14	Z.W.Z. 110.
Copidosoma buyssoni	---	12♀(1) 10-12♀(11)	---	Silvestri '14	A.A. 47.
Copidosoma gelechiae	---	12♀(1)	---	Hegner '14, '15	A.A. 46; J.M. 26.
Paracopidosomopsis floridans	8s, ♂m 16m, ♀m	8♂(1)	---	Patterson & Porter '17, Patterson '17, '21	B.B. 33; J.M. 36.

Species	Chromosome Number 2n	n	Remarks	Observer	References
CYNIPIDAE					
Andricus collaris	20o 10s	---	---	Dodds '38	Genetica 20.
A. Fecundatrix	20♀m	---	---	"	"
A. punctatus	---	6♀(1)	---	Hegner '15	J.M. 26.
Aulacidea hieracii	20♀m 10s	---	---	Dodds '33	Genetica 20.
Biorrhiza pallida	20♀m 10s	10♂(11)	---	Dodds '38	Genetica 20.
Cynips kollari	20♀m 20♂	10♀(1)	---	Hogben '20	P.R.S. London B 91.
Diastrophus nebulosus	20♀m	---	---	Hegner '15	J. M. 26.
Dryophanta erinacea	12♂m 13-14♀m	12♂(11)	---	Wieman '15	B.B. 28.
Neuoterus lenticularis (Spathegaster baccarum)	10♂m 20♀m 10s 20o (18-20m)	10♀(1,11) 10♂(11)	Partheno-genetic. 2 types of eggs, one with polar bodies may be ♀; other lacking p.bs.♂.	Doncaster '09, '11, '16	P.R.S. London B 82, B 83, B 89;
N. baccarum lenticularis	20♀m	10♀(1)	Polyploidy (4n) occurs in tissue cells.	Dodds '35, '38	A.R 64; Genetica 20.
N. baccarum	20♀m 10♂m 10s	10♀(1) 10♂(11)	Partheno-genetic. 2 types of eggs, one with polar bodies may be ♀; other lacking p.bs.♂.	Dodds '38, '39	Genetica 20, 21.
N. numismalis	20♀m	---	---	Dodds '38	Genetica 20.
Rhodites rosae	18-20♀m	9♀(1,11)	---	Henking '02	Z.W.Z. 54.
"	12o 12♀m	10-12♀(1, 11)	---	Schleip '09	Z.A. 35.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Rhodites rosae	18♀m	9♀(1)	---	Hogben '20	P.R.S. London B 91.
Trigonaspis megaptera	10s	10♂(11)	---	Dodds '38	Genetica 20.
Xestophanes potentillae	"	"	---	"	"
DIPRIONIDAE					
Diprion abieticolor	7♂m 14♀m	7♂(11) 7♀(1)	---	Smith '41	Sci. Agric. 21.
D. pallidum	"	7♂(11)	---	"	"
D. polystomum	12♀m 6s	---	Czechoslovakia	Smith '38	Nat. 141.
"	12♀, ♀m 6s, ♂m	6♀(1,11) 6♂(11)	Europa	Smith '41	Sci. Agric . 21.
"	14♀m 7s	---	Canada	Smith '38	Nat. 141.
"	14♀,♀m 7s,♂m	7♀(1,11) 7♂(11)	"	Smith '41	Sci. Agric. 21.
D. nemorum	7♂m 14♀m	7♂(11) 7♀(1)	---	"	"
D. simile	14s 28♀	14♂(11) 14♀(1)	---	Smith '41	Sci. Agric. 21.
Neodiprion dubiosus	14 ♀	---	---	Smith '44	Canadian J. Res. 20.
N. lecontei	"	---	---	"	"
N. swainei	"	---	---	"	"
N. sertifer	7♂m 14♀m	7♂(11)	---	Smith '41	Sci. Agric. 21.
EULOPHIDAE					
Melittobia chalybii	5♂m 10♀m	5♂(1) 5♀(1,11)	---	Schmieder '38	B.B. 74.
FORMICIDAE					
Camponotus herculeanus	---	16♂(1) 8♂(11)	---	Lams '08	A.Zf. 1.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Formica sanguinea	Ca 48m Ca 24m (Parth.)	24♀(1,11)	---	Schleip '08	Z.Jb. 26.
Lasius flava	24♀m	11♀(1)	---	Hogben '20	P.R.S. London B 91.
L. niger	20m 10-17m (Parth.)	10♀(1,11)	---	Henking '92	Z.W.Z. 54.
ICHNEUMONIDAE					
Aenoplex smithii	13s 26o	---	---	Koonz '36	B.B. 71.
Nemeritis canescens	22o	11♀(1,11)	---	Speicher '37	J.M. 61.
Orthocelma luteolator	22♀m	11♀(1)	---	Hogben '20	P.R.S. London B 91.
PTEROMALIDAE					
Pteromalus puparum	5♂m 10♂m	---	---	Guhl & Dozorcewa '34; Dozorcewa '36	C.R. Acad. Sci. Leningrad 3; C.R.A.S. URSS, 3.
TENTHREDINIDAE					
Allantus calceatus	16o 8s	---	---	Sanderson '32	Genetica 14.
A. cinctus	8♂m	---	Polyploidy occurs in tissue cells	"	"
Cimbex femorata (?)	8♂m	---	---	Sanderson '32	Genetica 14.
Cladius pectinicornis	6s 6-8♂m	6♂(11)	---	"	"
Cladius sp.	6s?	---	---	Sanderson '32	Genetica 14.
"	"	8♂(1)?	---	"	"
Croesus varus	---	7-8♀(11)	---	Doncaster '06	Q.J.M.S. 49.
"	---	8♀(11)	---	Sanderson '32	Genetica 14.
Hemichroa rufa	---	"	---	"	"

HYMENOPTERA* (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Nematus lacteus	---	8♀(11)?	---	Doncaster '06	Q.J.M.S. 49.
Nematus ribesii	Ca 16s	Ca 8♂(1) Ca 8♀(1)	---	Doncaster '04, '06, '07, '08, '09, '10	Proc. Cambr. Phil. Soc. 12; Q.J.M.S. 49, 51; Proc. Cambr. Phil. Soc. 14; Nat. 82; Sci. 31.
N. pavidus	---	8♀(11)	---	Doncaster '06	J.M.S. 49.
Pteronidea (Nematus) ribesii	8s 16o	8♀(1,11)	16n, 32n, 120n occur in tissue cells.	Sanderson '32	Genetica 14.
Pteronidea leucotrocha	8s 16o	---	---	"	"
P. melanaspis	8s	8♂(1,11)	---	Peacock '25	Nat. 116.
Pteronidea melanaspis	---	8♂(11)	---	Sanderson '32	Genetica 14.
Poecilosoma luteolum	8m	8♀(1)	Partheno-genetic	Doncaster '06, a,b	Proc. Cambr. Phil. Soc. 13; Q.J.M.S. 49.
"	---	8♀(11)	"	Sanderson '32	Genetica 14.
Priophorus brullei	12♀m	---	---	Comrie '38	Nat. 142.
Pristiphora erichsoni	14♀m	---	---	Smith '41	Sci. Agric. 21.
Pristiphora pallipes	16♀m	---	---	Comrie '38	Nat. 142.
Thrinax macula	7s 14o, ♀m	7♂(11) 14♀(1)	Chroms. un-reduced in eggs.	Peacock & Sanderson '39	Trans. Roy. Soc. Edinburgh 59.
T. mixta	8♂m	8♂(11)	---	Sanderson '32	Genetica 14.
Sirex-cyaneus	16♀m	"	---	Peacock & Gresson '31	Proc. Roy. Soc. Edinburgh, 51.
"	8s	---	Polyploidy occurs in tissue cells.	Sanderson '32	Genetica 14.

Species	Chromosome Number 2n	n	Remarks	Observer	References
TRICHOGRAMMIDAE					
Trichogramma chilonis	(?) 5s 10o 10s(2n♂)	---	---	Fukada & Takemura '43	Jap. J.G. 19.
VESPIDAE					
Polistes fadwigae	9s 18o, ♀m	9♂(11)	---	Machida '34	P.I.A. (Tokyo) 10.
P. jokohamae	6s 12o	6♂(11)	---	"	"
P. snelleni	13s 26o	13♂(11)	---	"	"
Vespa crabro	---	Ca 16♀(1)	---	Meves & Duesberg '08	A.M.A. 71.
V. maculata	---	16♂(1)?	---	Mark & Copeland '07	Proc. Am. Acad. Arts. Sci. 43.

DIPTERA

Species	Chromosome Number 2n	n	Remarks	Observer	References
ANTHOMYIIDAE					
Fucellia marina	12m	---	---	Metz '16	J.E.Z. 21.
Homalomya sp.	"	6♂(11)	---	"	"
Ophrya leucostoma	12s	6♂(1)	---	"	"
Pegomyia geniculata	12♀m	---	4n in tissue cells	Frolowa '29	Z.Z.M.A. 8.
Phorbia brassica	---	6♂(1)	X-Y♂	Stevens '06	J.E.Z. 5.
ASILIDAE					
Asilus lecythus	14s	7♂(11)	X-Y♂	Metz '16	J.E.Z. 21.
A. notatus	"	7♂(1,11)	"	Metz '16; Metz & Nonidez '23	J.E.Z. 21; A.Z. 17.
A. sericeus	10s	5♂(1,11)	"	Metz '16; Metz & '21	J.E.Z. 21, 32.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Dasyllis grossa	9♂ 10♀	5♂(1) 4,5♂(11)	X-O♂	Metz '22	B.B. 43.
D. thoracica	10♂	5♂(1,11)	X-Y♂	Metz '16	J.E.Z. 21.
Deromyia winthemi	12♂	6♂(1,11)	"	"	"
Erax rufibarbis	10♂	5♂(11)	---	"	"
Leptogaster badius	"	"	X-Y♂	"	"
BIBIONIDAE					
Bibio hortulanus	10m	5(Salivary chrom.)	---	Heitz & Bauer '33	Z.Z.M.A. 17.
BOMBYLIIDAE					
Anthrax lateralis	12♂	---	---	Metz '16	J.E.Z. 21.
A. sinuosa	18♂	9♂(11)	X-Y♂	"	"
Spogostylum simson	12♀	---	---	"	"
CALLIPHORIDAE					
Calliphora erythrocephala	12♀ 12m	6♂(1)	---	Metz '16	J.E.Z. 21.
"	12♂,♀	6♂(1,11)	X-Y♂	Kennecke '24	Z.Z.M.A. 1.
"	12♀	---	Polyploidy in tissue cells	Frolowa '29	Z.Z.M.A. 8.
"	12♂ 12♀	6♂(1,11)	X-Y♂	Naville '32	Z.Z.M.A. 16.
"	12♀	6♀(1)	---	Strasburger '33	Z.Z.M.A. 17.
Calliphora vomitoria	12♂,♀	6♂(1,11)	X-Y♂	Stevens '08	J.E.Z. 5.
Lucilia caesar	---	6♂(1,11)	"	"	"
"	12♂	"	"	Kennecke '24	Z.Z.M.A. 1.
Phormia regina	"	"	"	Metz '16	J.E.Z. 21.
Phormia terrae-novae	12♀	---	---	Naville '32	Z.Z.M.A. 16.

Species	Chromosome Number 2n	n	Remarks	Observer	References
CECIDOMYIDAE					
Asphondylia monacha	---	4 (Salivary)	Saliv. chroms. are polytene	White '48	J.M. 82.
Asteromyia rubra	---	"	"	"	"
Caryomyia sp.	---	"	"	"	"
Cecidomyia vicola	---	"	"	"	"
C. serotinae	---	"	"	"	"
Cecidomyia sp.	---	"	"	"	"
Contarinia canadensis	---	"	"	"	"
Dasyneura affinis	---	"	"	"	"
Lestodiplosis sp.	---	4 (Salivary)	32-ploid occurs in saliv. cells.	White '46, '48	J.M. 78, 82.
Lasioptera asterspinosae	8♀m 6♂m	---	In germ line of ♂ 8 pycnotic chroms. and diffused ones occur.	White '50	Univ. Texas Publ. 5007.
Monarthropalpus buxi	8♀m 6♂m 50s 50o	28+22 ♂(1,11) (4 in salivary)	In ♂ germ line, 2 groups of 28 & 22 chroms. occur. 22 chroms. degenerate. 4 of 28 chroms. enter the sperm. In ♀ diakinesis 4 bivalents and remaining obscure chroms. appear.	"	"
Miaster americana	---	20-24♀(1)	Paedogenetic. 1 meiotic div. in eggs.	Hegner '14	J.M. 25.

Species	Chromosome Numbers 2n	n	Remarks	Observer	References
Miastor americana	48s,o 12♀m	---	Octoploid in germ-line of paedog. embryo, diploid in soma. From correction of 1934.	Huettner '33, '34	A.R. 58, Suppl., 60, Suppl.
Miastor metraloas	20-24o 20-24m (Early cleavage) 10-11m (Late cl.)	20-24♀(1)	Paedogenetic. Elimination of chroms. in early cleavage.	Kahle '08	Zoologica 21.
"	48s,o 7♂m 12♀m	---	Paedogenetic. Elimination of chroms. in early cleavage. In meiotic div. of ♂, 2 kind of cells with 7 and 41 chroms. produced.	Kracykiewicz '35, '37, '38	C.R.S.B. 119; L.C. 56; C.R.S.B. 127.
Miastor sp.	48m (Parth.) 12m (Paedog.) 12♀m, 48♀ 6♂m, 48♂	(4 in salivary)	At 3rd and 4th cleavage of parth. egg, 36 chroms. eliminate. Octoploid number is retained in germ-line. Paedog. larvae develop with diploid, 12. ♀ sexual larvae have diploid soma & octoploid germ-line. ♂ larvae have haploid soma and octoploid g.m. In ♂ meiosis octoploid spermatocyte gives rise to 2 haploid sperms and a 7-ploid cell which degenerate. No sex chromosomes observed.	White '46, '48	J.M. 79, 82.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Oligotrophus pattersoni	8♀m 6♂m 34 s 34 o	10+24 ♂(1) 4II+26 ♀(1)	In ♂ meiosis 2 groups of 10 & 24 chroms. occur. 10 chroms. degenerate. 8 of 24 chroms. enter the sperm. In ♀ meiosis 4 bivalent and 26 univ. appear, and enter germ line.	White '50	Univ. Texas Publ. 5007.
Phytophaga celtiphyllia	12♀m 36 s 36 o	20+16 ♂(1) 6II+24 ♀(1)	In ♂ meiosis 2 grs. of 20 & 16 chroms. occur. 16 chrom. degenerate. 6 of 20 chroms. enter the sperm. In ♀ meiosis 6 biv. & 24 univ. appear, and enter germ line.	"	"
Rhopalomyia sabinae	8♀m 6♂m	—	In ♀ & ♂ germ line 25 chroms. are observable. In ♀ meiosis 4 bivalents & 17 univalents occur, and enter germ line.	"	"
Taxomyia taxi	8♀m 6♂m 40 s 40 o	8+32 ♂(1) (4 in salivary)	In ♂ meiosis 2 grs. of 8 & 32 chroms. occur. 32 chroms. degenerate. 4 of 8 chroms. enter the sperm.	White '47, '48, '50	J.M. 80, 82; Univ. Texas Publ. 5007.
Trishormomyia helianthi	8♀m 6♂m 24 s 24 o	8+16 ♂(1) 4II+16 ♀(1)	In ♂ meiosis 2 grs. of 8 & 16 chroms. occur. 16 chroms. degenerate. 4 of 8 chroms. enter the sperm. In ♀ meiosis 4 bivalents and 16 univ. appear, and enter germ line.	White '50	Univ. Texas Publ. 5007.
Walshomyia texana	8♀m 6♂m	---	---	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Oligarces paradoxus	66m,o = 55f 11 10-11m,o	---	During paedog. develop., 55 chroms. eliminate: 2n consists of 10-11 chroms.	Reitberger, '34, '40	Schweiz Nat. Ges. Zurich (1934); Chrom. 1.
Phytophaga destructor	8♂,om +	---	---	Metcalfe '35	Q.J.M.S. 77.
CHIRONOMIDAE (TENDEPEDIDAE)					
Chironomus alpestris	---	4 (Salivary)	---	Bauer '36	Z. Jb. 56.
Ch. bathophilus	---	"	---	"	"
Ch. confinis	---	4-8♀(1)	---	Hasper '11	Z. Jb. 31.
Ch. dorsalis	---	4 (Salivary)	---	Bauer '36	Z. Jb. 56.
"	---	"	---	Morita '43	Cyt. 12.
Ch. plumosus	---	"	---	Bauer '36	Z. Jb. 56.
Ch. riparius	---	4 8♀(1)	---	Hasper '11	Z. Jb. 31.
Ch. thummi	---	4 (Salivary)	---	Bauer '35 a,b	Naturwiss 23; Z.Z.M.A 23.
Chironomus sp. I & II	---	"	---	King & Beams '34	J.M. 56.
"	---	"	---	Bauer '36	Z. Jb. 56.
"	---	"	---	Poulson & Metz '38	J.M. 63.
Chironomus sp.	---	"	---	Kumagai '39	Vol. Jub. Prof. S. Yoshida, 1939.
Chironomus sp.	---	4 (Salivary)	---	Morita '42	Cyt. 12.
Chironomus sp.	8♂	4(Salivary)	Various soma	Sengun '48: Sengun & Kosswig '48	Commun, Univ. Ankara 1: Chrom. 3.
Cryptochironomus defectus	---	3 (Salivary)	---	Bauer '36	Z. Jb. 56.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Endochironomus sp. I & II	---	4(Salivary)	---	Bauer '36	Z. JB. 56.
Glyptotendipes polytomus	---	"	---	"	"
Glyptotendipes sp. I	---	"	---	"	"
Gly. sp. II	---	3(Salivary)	---	"	"
Microtendipes pedellus	---	4(Salivary)	---	"	"
Micropsectra praecox	---	"	---	"	"
Micropsectra praecox	---	"	---	"	"
Sergentia profundorum	---	3(Salivary)	---	"	"
Stictochironomus histrio	---	4(Salivary)	---	"	"
CORDYLURIDAE					
Scatophaga pallida	12s,o	6♂(1.11)	X-Y♂	Stevens '08	J.E.Z. 5.
S. stercoraria	12s	"	"	Kennecke '24	Z.Z.M.A. I.
CULICIDAE					
Aedes albopictus	6s,o	---	Somatic synapsis in mid-gut cells. 84 chroms. found in the same.	Suzuki '39; Sinoto & Suzuki '43	Jap. J.G. 15; Igaku & Seibutsugaku 3.
A. canadensis	6m	---	Epithelial cells of mid-gut are poly-ploid. Somatic synapsis occurs.	Berger '38	J.H. 29.
A. japonicus	"	---	---	Sinoto & Suzuki '43	Igaku & Seibutsugaku 3.
A. koreicus	"	---	---	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
A. togoi	6s,o	---	---	Suzuki '39; Sinoto & Suzuki '43	Jap. J.G. 15; Igaku & Seibutsugaku 3.
A. triseriatus	6m	---	Epithelial cells of mid-gut are polyploid. Somatic synapsis occurs.	Berger '38	J.H. 29.
Anopheles punctipennis	6s,o	3♂(1,11)	X-Y♂	Stevens '11	B.B. 20.
Anopheles sp.	---	6♂(1,11)	"	"	"
Armigeres obturbans	6m	---	---	Sinoto & Suzuki '43	Igaku & Seibutsugaku 3.
Chaoborus plumicornis	8s,♂ 8♀m	4♂(1,11)	X-Y♂. Occasionally 2 small chroms. associated with 2 large elements.	Frolowa '29 a,b	Z.Z.M.A. 8, 9.
Corethra (Chaoborus) plumicornis	3m	---	3 pairs?	Dehorne '15, '19	C.R. Ass. Franc. l'Avanc. Sci. 43; A.Z.E.G. 58.
Corethra (Mochlonyx) sp.	8♂, ♀m	---	X-Y♂	Frolowa '29	Z.Z.M.A. 9.
Culex apicalis	6m	---	Epithelial cells of mid-gut are polyploid. Somatic synapsis occurs.	Berger '38	J.H. 29.
C. hayashii	"	---	---	Sinoto & Suzuki '48	Igaku & Seibutsugaku 3.
C. pipiens	6s,o	3♂(1,11)	---	Stevens '10, '11	J.E.Z. 8; B.B. 20
"	6s	"	---	Lomen '14	Jena Z. 45.
"	3s,m 6o	"	---	Taylor '14	Q.J.M.S. 60.
"	6s,o	---	---	Metz '16	J.E.Z. 21.

Species	Chromosome Number 2n	n	Remarks	Observer	References
C. pipiens	6s,o 6m	3♂(1,11)	X fused with 1 autosome?	Whiting '17	J.M. 28.
"	6m	---	---	Hance '17	J.M. 28.
"	"	---	Epithelial cells of mid-gut are polyploid. Somatic synapsis occurs.	Holt '17	J.M. 29.
"	"	---	---	Taylor '17	Q.J.M.S. 62.
"	6s,o 6m	3♂(1)	---	Moffett '36	Cyt. 7.
"	6m	---	Epithelial cells of mid-gut are polyploid. Somatic synapsis occurs.	Berger '38 a,b	J.H. 29; Carnegie Inst. Publ. 49.
"	6m (4n-64n)	---	4n-64n arise by repeated reprod. of chrom. Somatic pairing occurs.	Grell '45	Genet. 31.
Culex pipiens pallens	6s,o	---	---	Suzuki '39; Sinoto & Suzuki '43	Jap. J.G. 15; Igaku & Seibutsugaku 3.
C. tarsalis	6s,o	3♂(1,11)	---	Stevens '11	B.B. 20.
C. territans	6m	---	Epithelial cells of mid-gut are polyploid. Somatic synapsis occurs.	Berger '38	J.H. 29.
C. tritaeniorhynchus	"	---	---	Sinoto & Suzuki '43	Igaku & Seibutsugaku 3.
Lutzia fuscana vorax	6s,o	---	---	Suzuki '39; Sinoto & Suzuki '43	Jap. J.G. 15; Igaku & Seibutsugaku 3.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Theobaldia incidens	6s,o	3♂(1,11)	---	Stevens '11	B.B. 20.
DROSOPHILIDAE*					
TYPE A			4 V's+2 R's+2 S's (♀)**		
Drosophila euraria	8	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
D. bromeliae	8s	---	---	Metz '16	A.N. 50.
D. buskii	8o	4♂(1)	---	Metz '16 a,b	J.E.Z. 21; A.N. 50.
"	8	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
Drosophila coracina	8	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
D. ficusphila	"	---	---	"	"
D. florae	8o	---	---	Metz '16	A.N. 50.
D. lutea	8	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
D. ampelophila (melanogatier)	8s,o 8m	4♂(1,11)	X-Y♂	Stevens '08	J.E.Z. 5.
D. melanogaster (ampelophila)	8o 8s	"	"	Metz '14, '16 a,b, '26	J.E.Z. 17; A.N. 50; Z.Z.M.A. 4.
"	8s,o	---	"	Bridges '16	Genet. 1.
"	8o	4♂(1,11) 4♀(1)	X-Y♂. 4n & 8n in soma.	Frolova '26, '31	Z.Z.M.A. 3; Z. Biol. Exp. (Moskaw) 7.
"	8s,o	"	X-Y♂	Guyenot & Naville '29	L.C. 39.
D. melanogaster	---	4♂(1,11)	"	Wosskressensky & Scheremetjewa '20	Z.Z.M.A. 10.

*The karyotypes were subdivided into 17 types (from A to Q) according to Metz and Moses (J.H. 14, 1923) and to Kikkawa and Peng (Jap. Jour. Zool. 7, 1938).

** V=V-shaped chromosome. v=small V-shaped chrom. R=rod-shaped chrom.

r=small rod-shaped chrom. J=J-shaped chrom. S=spheroidal chrom.

Species	Chromosome Number 2n	n	Remarks	Observer	References
D. melanogaster	8s	4♂(1,11)	No crossing-over in ♂.	Huettner '30	Z.Z.M.A. 11.
"	8♂,♀m	---	X-Y♂	Debzhansky '30, '32	Genet. 15; B. Zbl. 52.
"	---	4♂(1)	X-O or X-Y♂. Meiosis irregular and sterile in ♂ with I, partly deficient. The same with ♂ having irregular or extra X. Meiosis irregular in F1 between simulans ♀, and ♂ with irregular sex chroms. of melanogaster.	Shen, T.H. '32	Z.Z.M.A. 15.
"	8♂,♀m	---	X-Y♂. 1/2 of X and total of Y, heterochromotic.	Heitz '33	Z.Z.M.A. 20.
"	8o	---	6 in salivary.	Painter '33, '34 a,b	Sci. 78; Genet. 19; J.H. 25.
"	8♀,♂m	---	X-Yo♂	Kaufmann '34	J.M. 56.
"	8m	---	Artificial variation of number arises by translocation.	Dubinin '34, '36	B. Zhurn. (Moskaw) 3,5.
Drosophila melanogaster	8♂,♀m	---	---	Prokofieva '35	Z.Z.M.A. 22.
"	8o	---	6 in salivary.	Emmens '37	Z.Z.M.A. 26.
"	8	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
"	---	4♂(1,11)	Cleavage irregular in eggs treated with radium.	Sonnenblöck, '40	Proc. Nat. Acad. Sci. 26.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Drosophila melanogaster	8s(9,10)	46(1)	Meiosis in XY, XYY and XYYY males	Cooper '49	J.M. 84.
D. nebulosa (limbata)	8o	---	---	Metz '16, a,b	J.E.Z. 21; A.N. 50.
D. putrida (I)	8 m	---	---	Ward '49	Univ. Texas Publ. 4920.
D. quinaria	8 o	---	X-X♀	Metz '14	J.E.Z. 17.
D. robusta	8s	---	---	Metz '16	J.E.Z. 21; A.N.50.
"	8♂,om ♀	---	6 in salivary	Frolova '38	Biol. Zhurn. (Moskaw) 7.
D. rufa	8	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
D. saltans	"	---	---	Metz '16	A.N. 50.
D. simulans	"	---	---	Metz '23	J.H. 14.
"	8m	---	X-Y♂	Sturtevant '29	Z.W.Z. 135.
"	"	---	Rudimentary gonads in F1 with melanogaster.	Kerkis '33. '36	J.E.Z. 66; A.N. 70.
"	8♂,om ♀	---	X-Yo; 1/2 of X and total of Y, heterochromatic.	Heitz '33	Z.Z.M.A. 20.
"	8	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
D. suzukii	"	---	---	"	"
D. takahashii	"	---	---	"	"
" (I)	8♂m	---	X-Y♂, Y=r	Ward '49	Univ. Texas Publ. 4920.
D. vibrissina	8o 8♂,♀m	---	4n, 8n in tissue cells.	Frolowa '26	Z.Z.M.A. 3.

Species	Chromosome Number 2n	n	Remarks	Observer	References
D. virilis americana	9♂m 8♀m	---	*♂3V's+4r's +2s's ♀=4V's+ 2r's+2s's	(Spencer '38 (Hughes'39a,b (Stalker '40	Genet. 23. Genet. 24. Proc. Nat. Acad. Sci. 26.
Chymomyza (Drosophila) amoena	8s 8o	4♂(11)	X-Y♂	Metz '14, 16a,b	J.E.Z. 17, 21; A.N. 50.
Ch. (Drosophila) procnemis	8o	---	---	"	J.E.Z. 21; A.N. 50.
Mycodrosophila (Drosophila)dimidiata	"	---	---	"	"
Scaptomyza graminum	8s,o	4♂(11)	X-Y♂	Metz '16a,b	J.E.Z. 21; A.N. 50.
Type B			4 V's+2 R's (♀)		
Drosophila carlei	6o	---	---	Metz '16	A.N. 50.
D. prosaltans	6♀,♂m	---	5 in salivary. Geograph. variation of chroms.	Cavalcanti '48	Genet. 33.
D. willistoni	6♂,♀m 6s	3♂(1)	X-Y♂	Lancefield & Metz '21, Metz '26	Proc. Nat. Acad. Sci. 7; Z.Z.M.A. 4.
Type C			2 V's+6 R's+2 S's (♀)		
Drosophila calloptera (D. ornatipennis)	10o	---	X-Y♂. 1 supernumerary in some case.	Metz '16a,b	J.E.Z. 21; A.N. 50.
D. virilis texana	"	---	X-Y♂	"	"
Scaptomyza adusta	10♂,♀m	---	♂,♀=2V's +6r's+2s's	Patterson, Stone & Griffen '40	Genet. 25.
Type D			2 V's+6 R's (♀)		
Drosophila immigrans (tripunctata)	8o	---	X-X♀	Metz '14,'16	J.E.Z. 17; A.N. 50.

*V=V-shaped chrom., r=rod-shaped one and s=spheroidal one.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Drosophila immigrans (tripunctata)	8o	---	5 in salivary.	Emmens '37	Z.Z.M.A. 26.
" (I)	8♂m	---	X-Y♂, Y=v	Ward '49	Univ. Texas Publ. 4920.
D. komaii	8	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
Type E			4 V's+4 R's+2 S's (♀)		
Drosophila melanica	10s,o	5♂(11)	---	Metz'16a,b	J.E.Z. 21; A.N. 50.
" (I)	10♂m	---	X-Y♂, Y=J	Ward '49	Univ. Texas Publ. 4920.
D. melamissima	10	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
D. melanura (II)	10♂m	---	Y=V	Ward '49	Univ. Texas Publ. 4920.
D. micromelanica (II)	"	---	---	"	"
D. sordidula	10	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
D. trivittata	10o	---	4n,8n in tissue cells.	Frolowa '26	Z.Z.M.A. 3.
Type F			10 R's+2 S's (♀)		
D. aldrichi	12o	---	---	Metz '16	A.N. 50.
D. cardini	12♂m	---	X-Y♂, Y=R	Ward '49	Univ. Texas Publ. 4920.
D. cardina	12♂♀m	---	X-Y♂	Patterson & Crow '40	Univ. Texas Publ. 4032.
D. mullei mullei	"	---	"	"	"
D. m. mojavensis	"	---	"	"	"
D. phalerata	"	---	4n,8n in tissue cells.	Frolowa '26, '29	Z.Z.M.A. 3, 10.

Species	Chromosome Number 2n	n	Remarks	Observer	References
D. ramsdeni	12o	---	X-X♀	Metz '14, '16 a,b.	J.E.Z. 17, 21; A.N. 50.
D. similis	"	---	---	Metz '16	A.N. 50.
D. subobscura	"	---	6 in salivary.	Emmens '37	Z.Z.M.A. 26.
D. transversa	12o,♀m	---	4n, 8n in tissue cells.	Frolowa '26	Z.Z.M.A. 3.
Drosophila transversa	12	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
D. tripunctata (modesta)	"	---	---	Metz '16	A.N. 50.
D. virilis	12o 12s	5♂(1,11)	X-Y♂	Metz '14, '16a,b, '26	J.E.Z. 17, 21; A.N. 50; Z.Z.M.A. 4.
"	12o	---	Cytological observ. of crossing-over.	Chino & Kikkawa '33	Cyt. 4.
"	12♂,♀m	---	X-Y♂. 1/2 of X and total of Y, heterochromatic.	Heitz '33	Z.Z.M.A. 20.
"	"	---	X-Y♂	Hughes '39a,b	Genet. 24.
"	12♀m	---	---	Stalker '40	Proc. Nat. Acad. Sci. 26.
"	12s,o	---	6 in salivary. Various translocation observed.	Fujii '36,'42	Cyt. 7, 12.
"	12♂,♀m	---	X-Y♂. Somatic meiosis artific. arisen.	Makino '40, '42	Cyt. 10. 12.
Type G			2 R's+8 r's+2 S's (♀)		
Drosophila funebris	12s,o	6(1,11)	X-Y♂	Metz '14, '16a,b, '26	J.E.Z. 17, 21; A.N. 50; Z.Z.M.A. 4.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Drosophila funebris	12o,♀m	---	4n, 8n in tissue cells	Frolowa '26	Z.Z.M.A. 3.
"	12♂,♀m	---	X-Y♂ 1/2 of X and total of Y, heterochromatic.	Heitz '33a,b	Z.Z.M.A. 19, 20.
"	12o	---	6 in salivary.	Emmens '37	Z.Z.M.A. 26.
"	12	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
D. fulvamacula	12♂m	---	---	Ward '49	Univ. Texas Publ. 4920.
D. histrio	12♀m	---	4n, 8n in tissue cells.	Frolowa '26	Z.Z.M.A. 3.
"	12	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
D. micromelanica	12♂m	---	Y=R	Ward '49	Univ. Texas Publ. 4920
Type H			6 V's+2 S's (♀)		
Drosophila bizonata	8	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
Cladochaeta nebulosa	8o	---	---	Metz '16	A.N. 50.
Type I			2 V's+8 R's+2 S's (♀)		
Drosophila hydei	12♂,♀m	---	X-Y♂. 1/2 of X and total of Y, heterochromatic.	Heitz '33	Z.Z.M.A. 20.
"	12	---	6 in salivary	Kikkawa '35	P.I.A. (Tokyo) 11.
Drosophila hydei yucatanensis	---	---	6 in salivary	Spencer '40	A.N. 74.
D. micromelanica (III)	12om	---	Y=R	Ward '49	Univ. Texas Publ. 4920.
" (IV)	"	---	Larger S's	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
D. repleta	12s,o	---	X-Y♂	Metz '14, '16a,b	J.E.Z. 17, 21; A.N. 50.
"	12♂,♀m	---	6 in salivary	Frolowa '38	Biol. Zhurn.(Moskaw)7.
"	12	---	6 in salivary	Kikkawa '35, Kikkawa & Peng '38	P.I.A. (Tokyo) 11; Jap. J.Z. 7.
Type J			2 V's+6 R's+2 S's (♀)		
Drosophila miranda	9s,♂m 10o	4♂(1) 4,5♂(11)	X_1X_2-Y♂; X_1X_1-X_2X_2♀. Complex of ♀ similar to that of pseudoobscura ♀.	Dobzhansky '35a,b Dobzhansky & Tan '36	A.N. 69; Genet. 20. A.N. 70.
"	9s,♂m	4♂(1)	X_1X_2-Y♂. 2 strains with Y of different size. Univalents appear in F_1 of 2 strs. 6 in salivary.	Koller '39	J.G. 38.
"	9♂m 10♀m		X_1X_2-Y♂. Early death of ♀ of F_1 between pseudoobscura.	Kaufmann '40	J.M. 66.
"	9s	---	XX-Yo: Behavior of XX-Y in meiosis.	Cooper '46	Genet. 31.
D. pseudoobscura	10s,♂m 10o,♀m	5♂(1)	X-Y♂. 2 strains with Y of different sizes. 7 types of Y distinguishable in its size. Meiosis irregular in F_1 between diff. strains.	Dobzhansky & Boche '33 Dobzhansky '34 '35,'36,'37,'39 Dobzhansky & Tan '36	B.Z. 54. Z.Z.M.A. 21; Genet. 20; J.E.Z. 74; Gene. 22; 24. A.N. 70.

Species	Chromosome Number 2n	n	Remarks	Observer	References
D. pseudoobscura	10s	5♂(1,11)	X-Y♂. Size of Y differs according to strains. Meiosis irregular in F_1 between strs.	Darlington '34	Genet. 19.
"	---	---	6 in salivary in 2 strains.	Tan '35	Genet. 20.
"	10s	5♂(1,11)	Y degenerates in II-div. in 'Sex-ratio' ♂.	Sturtevant & Dobzhansky '36	Genet. 21.
"	10♂m 10♀m	---	X-Y♂	Koller '36	J.G. 32.
"	10♂m 10♀m	---	X-Y♂	Kaufmann '40	J.M. 66.
"	8s	---	---	Cooper '44	Proc. Nat. Acad. Sci. 30.
D. miranda x D. pseudoobscura	10♀m	---	F_1 not develop.	Kaufmann '40	J.M. 66.
Type K			4 V's+2 J's+2 R's+2 S's (♀)		
Drosophila affinis	10s,o	---	---	Metz '16a,b	J.E.Z. 21; A.N. 50.
"	10♂,♀m	---	X-Y♂	Sturtevant & Dobzhansky '36	A.N. 70.
D. algonquin	"	---	"	"	"
D. athabasca	"	---	"	"	"
D. azteca	"	---	"	"	"
"	10m	---	7 in salivary	Dobzhansky & Sokolow '39	J.H. 30.
Type L			6 V's+2 v's (♀)		
Drosophila ananassae (D. caribbea)	8s,o	---	X-Y♂	Metz '16	A.N. 50.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Drosophila ananassae (D. caribbea)	3♂,♀m	---	X-Y♂, X-X♀. 6 in salivary	Kaufmann '36 a,b, '37	Sci. 83; Proc. Nat. Acad. Sci. 22; Cyt. Fujii Jub.-Vol.
"	8s,o 8♂,♀m	---	X-Y♂. Y different in size by strains. 6 in salivary	Kikkawa '35, '36, '37, '38	P.I.A. (Tokyo) 11; Jap. J.G. 12; Cyt. Fujii Jub.-Vol.; Genetica 20.
D. bipectinata	8	---	---	Kikkawa & Peng '38	Jap. J.Z. 7.
Type M			4 V's+2 v's+2 R's (♀)		
D. lebanonensis	8♂m	---	Y=R	Ward '49	Univ. Texas Publ. 4920.
D. montium (Race A)	8o 8♂m	---	---	Kikkawa '36	Jap. J.G. 12.
"	8s,o	---	X-Y♂. 6 in salivary	Osima '39, '40	Jap. J.G. 15; Cyt. 10.
"	8 ♀,♂m	---	---	Freire-Maia '47	Bol. Fac. Fil. Cien. Letr. Univ. S. Paulo 86-Biol. Geral, 7.
" (A)	8♂m	---	Y=v	Ward '49	Univ. Texas Publ. 4920.
Type N			4 V's+2 R's (♀)		
Drosophila montium (Race B)	8♀ 8♂m	---	4V's+4r's	Kikkawa '36	Jap. J.G. 12.
"	8s,o	---	4V's+4r's; X-Y♂. 6 in salivary	Osima '39, '40	Jap. J.G. 15; Cyt. 10.
" (B)	8♂m	---	Y=v	Ward '49	Univ. Texas Publ. 4920.
" (C)	"	---	Y=R	"	"
Type O			4 J's+2 v's+4 R's (♀)		
Drosophila subtilis	10	---	6V's+4r's	Kikkawa & Peng '38	Jap. J.Z. 7.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Type P			4 V's+2 v's+2 S's (♀)		
Drosophila sulcata	8♂m 8o	---	X-Y♂; 6V's +2s's	Frolowa '36	Bull. Biol. Med. Exp. 2.
Type Q			6 V's+2 v's+2 S's (♀)		
Drosophila obscura	10s,o	5♂(1)	X-Y♂	Metz '16a,b, '26	J.E.Z. 21; A.N. 50; Z.Z.M.A. 4.
"	10s,o 10♂m	---	Chrom. complex different between strains from U.S.A. and U.S.S.R. 4n,8n occur in tissue cells.	Frolowa '26 Frolowa & Astaurow '29	Z.Z.M.A. 3. Z.Z.M.A. 10.
Type R*			4 V's+2 J's (♀)		
D. takahashii	6♂m	---	Y=r	Ward '49	Univ. Texas Publ. 4920.
Type S			4 V's+4 r's+2 S's (♀)		
D. putrida (II)	10♂m	---	Y=r	"	"
Type T			2 V's+4 v's+4 R's (♀)		
D. acanthroptera	10♂m	---	Y=J	"	"
Type U			6 V's+4 J's (♀)		
D. nannoptera	10♂m	---	Y=R	"	"
Type V			2 R's+8 r's+4 S's (♀)		
D. trispida	14♂m	---	Y=R	"	"
Type W			2 J's+2 j's+2 v's+4 r's+2 S's		
D. carbonaria	12♂m	---	---	"	"
Type X			4 V's+2 R's+2 S's (♀)		
D. castanea	8♂m	---	Y=V	"	"

*Types from R to DD are those newly established in recent years.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Type Y			2 V's+4 R's+2 S's (♀)		
D. testacea	8♂m	---	---	Ward '49	Univ. Texas Publ. 4920.
Type Z			2 V's+2 v's+6 r's (♀)		
D. melanica (II)	10♂m	---	Y=J	"	"
D. nigromelanica (II)	"	---	---	"	"
Type AA			2 V's+4 v's+4 r's (♀)		
D. melanura (I)	10♂m	---	Y=J	"	"
D. nigromelanica (I)	"	---	---	"	"
Type BB			2 V's+4 J's+2 R's+2 S's (♀)		
D. narragansett	10♂m	---	Y=J	"	"
Type CC			2 V's+2 J's+4 R's (♀)		
D. immigrans (II)	8♂m	---	---	"	"
Type DD			2 V's+2 v's+2 R's+4 r's (♀)		
D. mercatorum	10♂m	---	Y=r	"	"
Dryomyzidae					
Neuroctena analis	12s	6♂(11)	---	Metz '16	J.E.Z. 21.
Ephydridae					
Scatophila unicornis	13♂m 14♀m	7♂(1) 6,7♂(11)	X-Y♂	Heitz '33	Z.Z.M.A. 20.
Hippoboscidae					
Melophagus ovinus	16m	8	—	Lassman '36	Ann. Ent. Soc. Am. 29.
"	18s	9♂(1,11)	X-Y♂	Cooper '41	Proc. Nat. Acad. Sci. 27.
Olfersia bisulcata	8s	4♂(1)	X-Y♂	Cooper '44a,b	Genet. 29; Proc. Nat. Acad. Sci. 30.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Leptoceratidae					
Leptocera fontinalis	6-8m	---	---	Turner '31	J.H. 22.
Limoniidae					
Dicranomyia trinotata	6s	3♂(1)	---	Wolf '41	Chrom. 2.
Thaumastoptera calceata	"	"	---	"	"
Liriopeidae (Ptychopteridae)					
Liponeura cinerasceus	10s	---	X-Y♂	Wolf '46	Z. Naturf. 1.
Liriope sp.	"	---	"	"	"
Muscidae					
Musca domestica	12s 12o	6♂(1,11)	X-Y♂	Stevens '08	J.E.Z. 5.
"	12o	---	---	Metz '16	J.E.Z. 21.
"	12s	6♂(1,11)	X-Y♂	Keunecke '24	Z.Z.M.A. 1.
"	12s	---	X-Y♂	Perje '48	Hered. 34.
Mycetophilidae					
Brachypeza radiata	12♂,♀m	6♂(1)	X-Y♂	Calvez '48	Chrom. 3.
Exechia indecisa	14♀m	7♂(1,11)	X-Y♂. 4n, 8n in tissue cells	Frolowa '29	Z.Z.M.A. 8.
E. speciosa	12♂,♀m	6♂(1)	X-Y♂	Calvez '48	Chrom. 3.
Fungivora blanda	8o,♀m	4♂(1,11)	X-Y♂. 4n, 8n in tissue cells.	Frolowa '29	Z.Z.M.A. 8.
F. guttata	8♀m	4♂(1)	"	"	"
"	8s,♀m	4♂(1,11)	X-Y♂	Calvez '48	Chrom. 3.
F. fungorum	14♂,♀m	7♂(1,11)	"	"	"
F. lineola	"	"	"	"	"
F. unipunctata	"	"	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Mycetophila punctata	14♀m	7♂(1,11)	X-Y♂. 4n, 8n in tissue cells.	Frolowa '29	Z.Z.M.A. 8.
Rhymosia fenestralis	8♂,♀m	4♂(1,11)	X-Y♂	Calvez '48	Chrom. 3.
R. domestica	14♂,♀m	7♂(1,11)	"	"	"
Ortalidae					
Camptoneura picta	12s	6♂(1)	---	Metz '16	J.E.Z. 21.
Piophilidae					
Piophila casei	12	---	---	"	"
Phoridae					
Aphiocaeta sp.	6♀,♂m	---	---	Tokunaga '49	Jap. J.G. Suppl. 2.
Phora sp.	8♂m	---	4n, 8n in tissue cells	Frolowa '29	Z.Z.M.A. 8.
Rhagionidae					
Leptis sp.	---	5♂(1)	---	Heitz '33	Z.Z.M.A. 20.
Sapromyzidae					
Physegenua vittata	12s	---	---	Metz '16	J.E.Z. 21.
Sarcophagidae					
Ravinia peniculata	12o	---	---	"	"
Sarcophaga carnaria	12s	6♂(1,11)	X-Y♂	Keunecke '24	Z.Z.M.A. 1.
S. sarraciniae	12s 12♀m	"	"	Stevens '08	J.E.Z. 5.
S. tuberosa sarraciniae	12s,o 12m	"	X-Y♂. 4n, 8n in tissue cells.	Metz '16	J.E.Z. 21.
Sarcophaga sp.	12m	---	4n in egg follicle cells.	Metz '16,'22	J.E.Z. 21; B.B. 43.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Sciaridae					
Sciara agarica	8m 10s	---	1 pair of V= limited chrom.	McCarthy '45	A.N. 79.
S. fenestralis, I	"	---	"	"	"
S. fenestralis, II	8m 9s	---	1 large V=limit. chrom.	"	"
S. nacta	8m 10s	---	All rods.	"	"
Sciara coprophila	10s 10o 7♂m 8♀m	6♂(1,11) 5♀(1,11)	10 chroms. div. into 6 and 4 in I meiotic div. of ♂, without pairing of chroms. 4 chroms. degenerate.	(Metz '31,'33, '34,'36,'38 a,b (Metz & Schmuck '29, '31,'32	B.Z. 51; B.B. 64; Proc. Nat. Acad. Sci. 20; Cyt. 7; A.N. 72; Carnegie Inst. Publ. 501. Proc. Nat. Acad. Sci. 15, 17, 18.
			In II-div. 5 of 6 chroms. div. equationally, but one element runs undiv. to 1 pole. Cells of 5 +1 give rise to sperms. Behavior of chroms. in eggs is regular. During early cleavage, elimination of chroms. occurs and chrom. numbers, 7 in ♂ and 8 in ♀, are produced.	(Du Bois '33 (Smith-Stocking '36	Z.Z.M.A. 19. Genet. 21.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Sciara ocellaris	8m	5♂(11) 4♀(11)	The same as above. 2 strains with different chrom. complexes occur. 4 in salivary.	(Metz '35,'38 (Metz & (Lawrence'38 (Poulson & (Metz '38 (Metz & (Crouse '39 (Crouse '39 (Berry'39,'41	J.H. 26; A.N. 72. J.H. 29. J.M. 63. Genet. 24. A.N. 73. Proc. Nat. Acad. Sci. 25; J.M. 68.
Sciara pauciseta	10s 7♂m 8♀m	6♂(1,11)	The same as coprophila.	(Metz '25,'26, ('36,'38 (Metz & Moses ('26 (Metz, Moses (& Hoppe'26 (Schmuck '34	Sci. 61; AN. 60; Cyt. 7; A. N. 72. A.R. 34. Z.I.A.V. 42. B.B. 66.
Sciara prolifica	10s 7♂m 8♀m	6♂(1,11)	The same as coprophila.	(Metz'25,'26a, (b,'38 ((Metz & Moses ('26 (Metz, Moses (& Hoppe'26	Sci. 61; A.N. 60; Z.Z.M.A. 4; A.N. 72. A.R. 34. Z.I.A.V. 42.
"	8m 9s	---	---	McCarthy '45	A.N. 79.
Sciara reynoldsi	8m	---	---	(Metz & (Lawrence'38 (Metz & Crouse ('39 (Crouse '39 (Metz '38	J.H. 29. Genet. 24. A.N. 73. A.N. 72.
Sciara similans	10s 8♀m	6♂(1,11)	The same as coprophila.	(Metz'25,'26a, (b.'38 ((Metz & Moses ('26 (Metz, Moses (& Hoppe '26	Sci. 61; A.N. 60; Z.Z.M.A. 4; A.N. 72. A.R. 34. Z.I.A.V. 42.
Sciara sp. VII	8m 10s	---	1 pairs of rods, =limited chrom.	McCarthy'45	A.N. 79.
Sciara sp. XXIII	8m 10s	---	2 large unequal rods. =limited chrom.	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Sciara sp. XXV	8m,s	---	No limited chrom.	McCarthy '45	A.N. 79.
Simuliidae					
Simulium sp.	6m	3 salivary.	---	Geitler '34	Z. Jb. 54.
"	"	"	---	Painter & Griffen '37	Genet. 22.
Stratiomyiidae					
Ptecticus trivittatus	16	---	X-Y♂	Metz '16	J.E.Z. 21.
Syrphidae					
Eristalis bastardi	12s	6♂(1)	"	"	"
E. tenax	12s 12♂,♀m	6♂(1,11)	"	Stevens '08	J.E.Z. 5.
Mesogramma marginata	12s	6♂(1)	"	Metz '16	J.E.Z. 21.
Sphaerophoria scripta	8s	4♂(1,11)	---	Keunecke '24	Z.Z.M.A. 1.
Tubifera sp.	14♀m	---	4n in tissue cells.	Frolowa '29	Z.Z.M.A. 8.
Volucella obesa	12s	6♂(1)	X-Y♂	Metz '16	J.E.Z. 21.
Tachinidae					
Phorocera hamata	12♂m	6♂(1)	X-Y♂	Smith '44	Sci. Agric. 24.
Tetanoceratidae					
Tetanocera sparsa	12s 12o	6♂(1,11)	"	Stevens '08	J.E.Z. 5.
Tipulidae					
Tipula paludosa	8s 8o	---	Due to irregular div. of 2 small chroms., number varies from 9 to 12.	Bauer '31	Z.Z.M.A. 14.
Tipula sp.	8m	---	---	Heitz '33	Z.Z.M.A. 20.
Trypetidae					
Anastrepha ludens	10s	5♂(1)	---	Emmart '35	Proc. Entom. Soc. Washing. 37.

DIPTERA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Euaresta melanogaster	12	---	---	Metz '16	J.E.Z. 21.
Tephritis arnicae	11s	6♂(1) 5,6♂(11)	X-0♂	Keunecke '24	Z.Z.M.A. 1.
Ulidiidae					
Chaetopsis fulvifrons	8s	4♂(1)	---	Metz '16	J.E.Z. 21.

APHANIPTERA

(SIPHONAPTERA)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ctenocephalus canis	14♂m	---	X-Y♂	Kichijo '41	Bot. & Zool. (Tokyo) 9; Jap. J.G. 17.
Leptopsylla musculi	22s	11♂(1)	X-Y♂(?)	Karnkowska '32a,b	C.R.S.B. 110; Bull. Soc. Vandoise Sci. Nat. 57.

PROCHORDATA

TUNICATA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ascida mentula	---	9♀( )	---	Boveri '90	Jena Z. 24.
Cionia intestinalis	18m	---	♀ in ♂ and ♀ pronucleus.	"	"
Distalpia occidentalis	---	12♀(11)	---	Bancroft '99	Bull. Mus. Comp. Zool. Harvard 35.
Phallusia mamillata	13-16m (16)	8♀(1,11)	---	Hill '95	Q.J.M.S. 38.
Styelopsis grossularia	4s 4o	4♂(1),2♂(11) 8♀(1) 4♀(11)	---	Julin '93	B.B. Fr. Bel. 25.
Tethyum plicatum	---	16♂(1,11)	---	Minouchi '36	Z.Z.M.A. 23.

ACRANIA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Amphioxus lanceolatus	---	10?♀(11)	---	Van Der Stricht '95,'96	Bull. Acad. Roy. Belg. Ser. 3, 30; A.B. 14.
Amphioxus lanceolatus	24m	12?♀(1,11)	---	Sobotta '97	A.M.A. 50.
"	24o	12♀(1,11)	---	Cerfontaine 'C5a,b	Acad. Roy. Belg. Sci. 1905; A.P. 22.

VERTEBRATA

CYCLOSTOMATA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Bdellostoma burgeri	48?s	---	---	Schreiner '08	A.Z.F. 1.
Myxine glutinosa	ca. 50m	---	---	Retzius '90	Biol. Fören. Stockholm 2.
"	ca. 52s ca. 52m	26♂(1,11)	---	Schreiner '04a,'04b	A.A. 24; A.B. 21.

PISCES

DIPNOI

Species	Chromosome Number 2n	n	Remarks	Observer	References
Lepidosirenidae					
Epiceratodus forsteri	32-38m	---	---	Wickbom '45	Hered. 31.
Lepidosiren paradoxa	36?m	---	---	Murry '06	A.A. 29.
"	38m	19♂(1)	---	Agar '11,'12	Q.J.M.S. 57, 58.
Protopterus annectens	34s	17♂(1)	---	Wickbom'45	Hered. 31.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Catulidae					
Pristiurus melanostomus	---	30-50♀(1)	—	Kastschenko '90	Z.W.Z. 50.
(Pristiurus sp.)	ca. 36s 30-36o 30-36m	ca. 18♀(1,11)	---	Rückert '92	A.A. 7.
"	24s	12♂(1,11)	—	Moore '95; Farmer & Moore '04	Q.J.M.S. 38, 48.
Scyllium canicula	---	30-50♀(1)	—	Kastschenko '90	Z.W.Z. 50.
"	24s	12♂(1,11)	---	Moore '94, '95; Farmer & Moore '04	A.A. 9; Q.J.M.S. 38, 48.
Scyllium canicula	---	20-24♂(1) 14-16♂(11)	---	Rawitz '99	A.M.A. 53.
"	---	17-19♀(1)	---	Cerruti '08	Atti Acad. Sci. (Napoli), IIa, 13.
Rajidae					
Raja macrorhynchus	24s	12♂(1,11)	---	Moore '95 Farmer & Moore '04	Q.J.M.S. 38, 48.
Raja maculata	"	"	---	"	"
Raja meerdervoortii	104s	52♂(1,11)	Sex. Chrom. unknown	Makino '37	Cyt. Fujii Jub.-Vol.
Squalidae					
Scylliorhinus catula	---	31♂(1,11)	—	Matthey '37, '47	C.R.S.B. 126; Sci. Genetica 3.
Spinax niger	60-70s	---	---	Schreiner '07	A.B. 22.
Squalus suckleyi	62s	31♂(1,11)	Sex Chrom. unknown.	Makino '37	Cyt. Fujii Jub.-Vol.
Torpedidae					
Torpedo ocellata	---	30-50♀(1)	---	Kastschenko '90	Z.W.Z. 50.

ELASMOBRANCHII (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
(Torpedo sp.)	24s	12♂(1,11)	---	Moore '95 Farmer & Moore '04	Q.J.M.S. 38, 48.

TELEOSTOMI

Species	Chromosome Number 2n	n	Remarks	Observer	References
Anabantidae					
Betta splendens	42s	21♂(1,11)	X-X♂?, X= largest rod.	Bennington '36	J.M. 60.
"	"	21♂(1)	---	Svärdson & Wickbom '42	Hered. 28.
Macropodus operculeris	---	"	---	"	"
Anguillidae					
Anguilla vulgaris	36?s, 36?o	---	---	Rodolico '33	Publ. Staz. Zool. Napoli 8.
Atherinidae					
Menidia notata	36m	---	---	Moenkhaus '04	A.J.A. 3.
Esocidae					
Esox lucius	18m	---	---	Svärdson & Wickbom '39	Hered. 25.
Umbra limi	22s, 20?m	11♂(1,11)	X-X♂?	Foley '26	B.B. 50.
Cobitidae					
Barbatula oreas	48s	24♂(1,11)	---	Makiko '41	Cyt. 12.
Misgurnus anguillicaudatus	52s	24♂(1,11)	Sex chrom. unknown	Makino '37, '41	Z.M. (Jap.), 49; Cyt. 12.
Cottidae					
Cottus bairdii	36-38s	18♂(1)	---	Hann '27	J.M. 43.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Cyprinidae					
Acheilognathus lanceolatus	50s	25♂(1,11)	---	Makino '39	Cyt. 9.
Carassius auratus	94s	47♂(1,11)	In 13 varieties, n=48 ~51(1) due to occurrence of univalents.	Makino '34, '40, '41	Jap. J.G. 9; Z.M. (Jap.) 52; Cyt. 12.
Carassius carassius	"	"	Various varieties of Funa, Hibuna and Iron-fish.	Makino '34, '41	Jap. J.G. 9; Cyt. 9.
Cyprinus carpio	104s	52♂(1,11)	---	Makino '34, '39	"
C. carpio specularis	19s	---	---	Barigozzi 37	Soc. Ital. Sci. Nat. Mus. Milano 76.
C. carassius x C. auratus	---	47♂(1)	Univalents occur.	Makino '41	Cyt. 12.
Cyprinus carpio x carassius carassius	99s	---	Male sterile.	Matsui & Makino '33	Jap. J.G. 19.
Phoxinus percnurus sachalinensis	---	27♂(1,11)	---	Nogusa '43	"
Pseudorasbora parva	50s	25♂(1,11)	---	Makino '39	Cyt. 9.
Pungtungia hilgendorfi	"	---	---	Nogusa '43	Jap. J.G. 19.
Tribolodon hakuensis	"	25♂(1,11)	---	Makino '39	Cyt. 9.
Zacco platypus	"	---	---	Nogusa '43	Jap. J.G. 19.
Z. temminkii	"	---	---	"	"
Cyprinodontidae					
Fundulus heteroclitus	36m	---	---	Moenkhaus '04	A.J.A. 3.
"	45m	---	---	Pinney '18	J.M. 31.
Gambusia holbrooki	36s	18♂(1,11)	---	Geiser '24	B.B. 47.
Heterandria formosa	46s	23♂(1)	---	Wickbom '43	Hered. 29.
Lebistes reticulatus	46s 46o	23♂(1,11) 23♀(1)	X-Y♂?	Winge '22, '23	J.G. 12; 13.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Lebistes reticulatus	---	23♂(1,11)	X-Y♂	Vaupel '29	J.M. 47.
"	46s	"	Sex chrom. unknown.	Iriki '32a,b	Z.M. (Jap.) 44; P.I.A. (Tokyo) 8.
"	"	23♂(1)	---	Wickbom '43	Hered. 29.
Limi vittata	"	"	---	"	"
L. candofasciata tricolor	"	"	---	"	"
Mollienisia sphenops	36s	---	---	Meyer '38	J.G. 36.
"	46s	23♂(1)	---	Wickbom '43	Hered. 29.
M. sph. melanistica	38s	19♂(1)	---	"	"
M. velifera	46s	23♂(1)	---	"	"
M. sph. mel. x M. sph.	42s	21♂(1)	$19_{II}+4_{I}$	"	"
M. sph. x M. vel.	46s	23♂(1)	---	"	"
Oryzias latipes	---	22-24♂(1)	---	Goodrich '27	J.E.Z. 49.
Oryzias (Aplocheilus) latipes	48s	24♂(1)	Sex chrom. unknown.	Iriki '32	Z.M. (Jap.) 44; P.I.A. (Tokyo) 8; S.R. Tokyo B.D. Sec. B, 1.
"	"	"	---	Katayama '37	Bull. Jap. Soc. Sci. Fish. 5.
Phallichtys pittieri	46s	23♂(1)	---	Wickbom '43	Hered. 29.
Phalloceros caudimaculatus reticulatus	"	"	---	"	"
Platypoecilu couchiana	---	24♂(1)	X-X♂?	Ralston'34a,b	Sci. 78; J.M. 56.
"	---	"	---	Friedman & Gordon '34	A.N. 68.
Platypoecilus maculatus	---	"	X-X♂?	Ralston'34a,b	Sci. 78; J.M. 56.
"	---	"	---	Friedman & Gordon '34	A.N. 68.
"	48s	24(1)	---	Wickbom '43	Hered. 29.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Platypoecilus xiphidium	---	24♂(1)	---	Friedman & Gordon '34	A.N. 68.
Platypoecilus variatus	---	25♂(1)	---	"	"
"	---	"	---	Wickbom '43	Hered. 29.
Platypoecilus couch. x P. maculatus	---	24♂(1)	---	Friedman & Gordon '34	A.N. 68.
Platypoecilus xiph. x P. maculatus	---	"	---	"	"
Platypoecilus variat. x P. maculatus	---	24,25♂(1)	---	"	"
Rivulus santensis	48s	24♂(1)	---	Wickbom '43	Hered. 29.
Xiphophorus hellerii	---	24♂(1)	---	Friedman & Gordon '34	A.N. 68.
"	48s	24♂(1)	---	Wickbom '43	Hered. 29.
X. motezumae	---	"	---	Friedman & Gordon '34	A.N. 68.
Xiphophorus sp.	---	"	X-X♂?	Ralston'34a,b	Sci. 78; J.M. 56.
Xiphophorus x Platypoecilus	---	"	---	"	"
Xiphophorus hell. x Platypoecilus mac.	---	"	---	Friedman & Gordon '34	A.N. 68.
Gasterosteidae					
Pungitius tymensis	42s	21♂(1,11)	Sex Chrom. unknown.	Makino'34a,b	Cyt. 5; Jap. J.G. 9.
Pungitius pungitius	---	"	"	"	"
Gobiidae					
Tridentiger obscurus	44s	22♂(1)	---	Nogusa '50	Jap. J.G. 25.
Hexagrammidae					
Hexagrammos octogrammus	---	24♂(1,11)	---	Makino '37	Z.M. (Jap.) 49.

TELEOSTOMI (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Labridae					
Ctenolabrus adspersus	38-48m	---	---	Pinney '18	J.M. 31.
Percidae					
Lucioperca lucioperca	24m	---	---	Svärdson & Wickbom '39	Hored. 25.
Perca fluviatilis (Perch)	27s	---	---	Turner '19	J.M. 32.
"	28m	---	---	Svärdson & Wickbom '39	Hered. 25.
Pholidae					
Pholis pictus	46s	---	---	Makino '37	Z.M. (Jap.) 49.
Salmomidae					
Coregonus albula	80m	---	16V's	Svärdson '45	Medd. Stat. Und. Försöksanst. Sötvatt-fisk. 23.
C. asperi maraenoides	36m	---	---	Kupka '48	R. Suisse Z. 55.
C. exiguus albellus	70±2m	---	---	"	"
C. lavaretus	80m	---	16V's	Svärdson '45	Medd. Stat. Und. Försöksanst. Sötvatt-fisk. 23.
C. l. baeri	"	---	---	Prokofieva '34	Cyt. 5.
C. Schinzi duplex	72m	---	---	Kupka '48	R. Suisse Z. 55.
C. wartmanni coeruleus	70±2m	---	---	"	"
Coreg. l. baeri x Salv. font.	80m	---	---	Prokofieva '34	Cyt. 5.
Oncorhynchus keta	74	---	Primordial germ cell	Makino '37	Z.M. (Jap.) 49.
Osmerus eperlanus	58m	---	10V's	Svärdson '45	Medd. Stat. Und. Försöksanst. Sötvatt-fisk. 23.
~~Salmo~~ alpinus	80m	---	16V's	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
S. carpio	96s	---	---	Pomini '39	Sci. Genet. 1 (Italia).
S. fario	---	12♀(1,11)	---	Böhm '91	Sitz. Ges. Morph. Phys. Munchen, 7.
" (=Trutta fario)	24m	"	---	Behrens '98	A.Hf. 10.
" ('Forelle')	ca. 12?m	---	Sperm by radium	Oppermann '13	A.M.A. 83.
" "	84m	---	---	Prokofieva '34	Cyt. 5.
" "	"	---	---	Pomini '39	Sci. Genet. 1 (Italia).
S. fontinalis	84m	---	16V's	Svärdson '45	Medd. Stat. Und. Försöksanst. Sötvatt.-fisk. 23.
S. irideus	12?s	---	---	Mrsic '23	A.M.A. 98.
S. (Trutta) lacustris	---	24♀(1,11)	---	Blanc '94	Ber. Nat. Ges. Freiburg, 8.
"	70m	---	---	Pomini '39	Sci. Genet. 1 (Italia).
S. marmoratus	84s	---	---	"	"
S. salar	60m	---	---	Prokofieva '34	Cyt. 5.
"	"	30♂(1)	12V's	Svärdson '45	Medd. Stat. Und. Försöksanst. Sötvatt.-fisk. 23.
S. salar x Salvelinus fontinalis	70m	---	---	Prokofieva '34	Cyt. 5.
S. trutta	80m	40♂(1)	16V's	Svärdson '45	Medd. Stat. Und. Försöksanst. Sötvatt.-fisk. 23.
S. salar x S. trutta	70m	30♂(1) (32-38)	---	"	"
S. trutta x S. salar	---	20-30♂(1)	Sterile	"	"
Thymallus thymallus	102m	---	28V's	"	"

AMPHIBIA

APODA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Coecilliidae					
Ichthyophis glutinosus	42s, 42♂m	21♂(1,11)	---	Seshachar '36, '37a,b, '39	Z.Z.M.A. 24, 27; Cyt. 8, 10.
Uraeotyphlus narayani	36s	18♂(1,11)	---	Seshachar '39	L.C. 48.

URODELA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Amphiumidae					
Amphiuma (means)	---	12♂(1,11)	---	McGregor '99	J.M. 15, Suppl.
Cryptobranchidae					
Cryptobranchus allegheniensis	ca. 56m	---	---	Smith '29	J.M. 47.
"	62s	31♂(1,11)	---	Makino '34, '35	Z.M. (Jap.) 46; J.M. 58.
Megalobatrachus japonicus	56-58m	---	---	Suzuki '26	Z.M.(Jap.) 38.
"	64s	32♂(1,11)	Sex chrom. unknown.	Iriki '31, '32	P.I.A. (Tokyo) 7; S. R. Tokyo B.D. Sec. B,1.
Chioglossidae					
Chioglossa lusitanica	---	12♂(1)	---	Mateus '42a,b	Inst. Zool. "Augusto Nobre" 12, 13.
Hynobiidae					
Hynobius dunni	56s	---	---	Makino '35	Jap. J.G. 10.
"	"	---	---	Sato '35, '36	Z.M. (Jap.) 47; J.S. Hiroshima U. Ser. B, 4.
Hynobius kimurai	56s	28♂(1,11)	20V's+36r's	Makino '35, '39	Jap. J.G. 10; Z.M. (Jap.) 51.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Hynobius kimurai	60s	---	16V's+44r's	Sato '35,'36	Z.M. (Jap.) 47; J.S. Hiroshima U. Ser. B, 4.
Hynobius naevius	56s	28♂(1,11)	—	Makino '39	Z.M. (Jap.) 51.
Hynobius nebulosus	"	—	—	Makino '34a,b	Trans. Sapporo Nat. Hist. Soc. 13; Z.M. (Jap.) 46.
"	"	28♂(11)	—	Sato '35,'36	Z.M. (Jap.) 47; J.S. Hiroshima U. Ser. B, 4.
Hynobius nigrescens	"	—	—	Makino '32	J.F.S. Hokkaido I.U. Ser. VI, 2.
Hynobius leechii	"	28♂(1,11)	—	Makino '34a,b	Trans. Sapporo Nat. Hist. Soc. 13; Z.M. (Jap.) 46.
Hynobius lichenatus	58s	---	---	Makino '32	J.F.S. Hakkaido I.U. Ser. VI, 2.
Hynobius retardatus	40s	20♂(1,11) 20♀(1,11)	Sex chrom. unknown.	Makino '32,'33 '34, '47	J.F.S. Hokkaido I.U. Ser. VI, 2; Jap. J.G. 8; J.F. S. Hokkaido I,U. Ser. VI, 3, 9.
Hynobius okiensis	56s	---	—	Sato '40	Z.M. (Jap.) 52.
Hynobius sadoensis	"	---	---	Sato '43	
Hynobius stejnegeri	"	---	---	Makino '39	Z.M. (Jap.) 51.
Hynobius tsuensis	"	---	---	Sato '35,'36	Z.M. (Jap.) 47; J.S. Hiroshima U. Ser. B, 4.
Hynobius tokyoensis	56s	---	---	Makino '32	J.F.S. Hokkaido I.U. Ser. VI, 2.
Pachypalaminus boulengeri	"	---	---	Sato '34,'35, '36	Z.M. (Jap.) 46,47; J.S. Hiroshima U. Ser. B, 4.
Salamandrella keyserlingii	62s	---	—	Makino '32	J.F.S. Hokkaido I.U. Ser. VI, 2.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Proteidae					
Proteus anguineus	18s	9♂(1,11)	---	Stieve '18,'20	A.A. 51; A.M.A. 93.
Necturus maculosus	---	12♂(1)	X or XY associates with an autosome?	King '12	A.R. 6.
Salamandridae					
Amblystoma mexicanum	28s	---	---	Wickbom '45	Hered. 31.
"	2n(28), 3n,n & mosaics	---	Refrigerated eggs. Oocytes degenerate.	Fankhauser & Humphrey '42, '46	B.B. 83; J.M. 79.
A. tigrinum('Siredon')	12m	---	---	Kölliker '89	Gewebelehre d. Menschen.
" ('Axolotl')	ca. 16m	4-10♀(1), 8♀(11)	---	Fick '93	Z.W.Z. 56.
" (")	ca. 30m	14-16♀(1,11)	---	Jenkinson'04	Q.J.M.S. 48.
" ('Siredon')	24m	---	---	Muckermann'13	L.C. 28.
"	"	---	---	Mack '14	Kansas Univ. Sci. Bull. 9.
"	28m	---	---	Parmenter'19	J.M. 33.
"	28s	14♂(1)	Sex chrom. unknown.	Galgano '33, '38	A.I.A.E. 32; Atti Soc. Ital. Anat. 7.
"	"	"	X-0♂; X+autosome?	Carrick '34	Trans. Roy. Soc. Edinb. 58.
"	24,28m	---	---	Prokofieva'35	Cyt. 6.
Anaides(=Autodax) lugubris	28(23-30)s	14♂(1)	---	Snook & Long '14	Univ. Calif. Publ. 11.
Batrachoseps attenuatus	24s	12♂(1,11)	---	Eisen '00	J.M. 17.
"	24m	"	---	Janssens & Dumez '03; Janssens '05	L.C. 20; L.C. 22.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Desmognathus fuscus	---	12♂(1,11)	---	Kingsbury '99, '02	Zool. Bull. 2; A.J.A. 1.
"	24s	12♂(1)	---	Montgomery '03	B.B. 4.
Eurycea bislineata	28m(2n) 42m(3n) 56m(4n)	---	3n & 4n in 10%, naturally occurred.	Fankhauser '39	J.H. 30.
Geotriton(=Spelerpes) fuscus	24s	12♂(1,11)	---	Terni '10, '14	A.Zf. 12.
Plethodon cinereus	"	12♂(1)	---	Montgomery '03	B.B. 4.
Pleurodeles waltlii	---	12♂(1)	Sex chrom. unknown.	Galgano '33	A.I.A.E. 32.
"	24s	12♂(1)	---	Wickbom '45	Hered. 31.
Salamandra atra	16?s	---	---	Champy '13	A.Z.E.G. 52.
S. maculosa	24s	12♂(1,11)	---	Flemming '82, '87	A.M.A. 20, 29.
"	"	---	---	Rabl '85, '89	Morph. Jb. 10; A.A. 14.
"	24s, 24o, 24m	12♂(1,11)	---	Vom Rath '93, '94	Z.W.Z. 57; B.Z. 14.
"	"	"	---	Meves '95, '97, '11	A.A. 10; A.M.A. 48. 77.
"	24s	12♂(1,11) 12♀(1,11)	---	Janssens '00, '01, '02, '04	A.A. 17; L.C. 19; A.A. 21, 24.
"	"	12♂(1,11)	---	Schreiner '07	A.B. 22.
"	4-43m(a) 19-21m(b)	---	(a)blood cell (b)soma	Della Valle '09, '11	Arch. Zool. Ital. 4,5.
"	24s, 24m	---	---	DeHorne '10, '11	C.R.A.S. 150; A.Z. 6.
"	16?s	---	---	Champy '13	A.Z.E.G. 52.
"	24s, 24m	---	---	Muckermann '13	L.C. 28.
"('Salamander')	24m	---	---	von Erlanger '96	Z.A. 19.

Species	Chromosome Number 2n	n	Remarks	Observer	References
S. salamandra	24s	12♂(1)	---	Wickbom'49	Hered. 35.
Salamandrina perspicullata	---	12♂(1)	Sex chrom. unknown.	Galgano '33	A.I.A.E. 32.
Triton alpestris	---	12♀(1,11)	---	Carnoy & Lebrun '99; Lebrun '01	L.C. 16, 19.
"	24s	12♂(1,11) 12♀(1,11)	---	Janssens '00, '01, '02, '04	A.A. 17; L.C. 19; A.A. 21; 24.
"	18-24s	---	---	Champy '13	A.Z.E.G. 52.
"	n, 2n, 3n	---	Ovary degenerates.	Fischberg '45, '47	R. Suissez. 52, 54.
" (Triturus alpestris)	24s	12♂(1)	---	Wickbom '49	Hered. 35.
T. cristatus	---	12♀(1,11)	---	Carnoy & Lebrun '99	L.C. 16.
"	24s	12♂(1,11) 12♀(1,11)	---	Janssens '00, '01, '02, '04	A.A. 17; L.C. 19; A.A. 21, 24.
"	24m	---	---	Jolly '04	A.A.M. 6.
"	18-24s	---	---	Champy '13	A.Z.E.G. 52
"	24s	12♂(1,11)	---	Meek '13	Phil. Trans. Roy. Soc. London 23B.
"	"	"	Sex chrom. unknown.	Galgano '33	A.I.A.E. 32.
" (Triturus cristatus)	24s	12♂(1)	---	Wickbom '45	Hered. 31.
" (")	---	"	---	White '46	J.E.Z. 102.
T. crist. ♂ x T. marmoratus ♀	---	(2-9)$_{II}$ + (6-20)$_{I}$♂(1) 7-24♂(11)	Sterile; no sperm-formation.	"	"
(Double back-cross)	---	(2-11)$_{II}$ + (2-20)$_{I}$♂(1) 6-72♂(11)	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
T. palmatus	18-24s	---	---	Champy '13	A.Z.E.G. 52.
"	12-16m	---	---	Retzius '81	Biol. Unters.
"	7-24m 8-19m	---	Merogony	Fankhauser '34, '37	J.E.G. 68, 75.
"	n,3n,4n	---	Ovary degenerates.	Fischberg '45, '47	R. Suisse Z. 52, 54.
T. punctatus	24s	12♂(1,11)	---	Janssens '00, '01, '02, '04	A.A. 17; L.C. 19; A.A. 21, 24.
Triton (Molge) pyrrhogastra	"	---	---	Muckerman '13	L.C. 28.
Triton taeniatus	---	12-14♀(1)	---	Born '94	A.M.A. 43.
"	---	12♀(1,11)	---	Carnoy & Lebrun '99	L.C. 16.
"	24m	---	---	Prokofieva '35	Cyt. 6.
"	12m(n)	---	Merogonic individual(n)	Baltzer '22; Fankhauser '38a,b	Verh. Schweiz Nat. Ges. Bern; J.M. 62; J.E.Z. 79.
"	36s(3n)	---	3n adult: Uni-trivalents appear.	Böök '40	Hered. 26.
T. vulgaris	18-24s	---	---	Champy '13	A.Z.E.G. 52.
"	12m	---	With sperms treated with radium.	Hertwig '13	A.M.A. 82.
"	24s	12♂(1,11)	Sex chrom. unknown.	Galgano '33	A.I.A.E. 32.
" (Triturus vulgaris)	24s	12 (1)	---	Wickbom '45	Hered. 31.
(Triton sp.)	24m	---	---	Rebl '85	A.A. 14.
"	24s	12♂(1)	---	Moore & Embleton '05; Moore & Arnold '05	P.R.S. Lond. 77, 77.
T. palmatus x Salamadra	24m	---	Early death in develop.	Schönmann '38	Roux' Arch. 138.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Triton x Salamandra	12m(n)	---	Merogonic hybrid; early death.	Boehringer '38	Roux' Arch. 138.
Triturus ensicauda	24s	12♂(1,11)	Sex chrom. unknown.	Sato '34	J.S. Hiroshima U. Ser. B, 3.
Triturus (Diemyctilus) pyrrhogaster	"	"	"	Iriki '31, '32a,b	P.I.A. (Tokyo) 7; Z.M. (Jap.) 44; S.R. Tokyo B.D. Sec. B, 1.
"	"	"	"	Sato '32	J.S. Hiroshima U. Ser. B, 2.
"	12m(n)	---	Merogonic; early death.	Fankhauser '37	J.M. 28.
"	"	---	Androgenic; 3n appear.	Kaylor '39, '40a, '40b	B.B. 77, 79, 79.
"	12m(n) 36m(3n) 36s(") 36-37o(")	---	3n from refrigerated eggs. Ovaries rudimentary in 3n♀. Meiosis irregular in 3n♂.	Kawamura '41, K. & Sanada '43, '49	Z.M. (Jap.) 53; Hyogoken Nat. Hist. Soc. 8-9; Jikken-Keitaigaku 5.
"	12m(n)	---	n in connective tissue	Ishizawa '37	C.R.S.B. 125.
"	2n,3n,n	---	Spontaneous & cold-induced eggs.	Fankhauser, Crotta & Perrot '42	J.E.Z. 89.
"	24s 24o	12♂(1,11)	No sex element.	Maki '49	Seibutu. 4.
Triturus similans	2n,3n,n	---	Refrigerated eggs.	Castello '42	A.R. 84.
Triturus (Diemyctilus) torosus	---	10-12♀(1,11)	---	Lebrun '02a,b	B.B. 3; L.C. 20.
Triturus viridescens	22m(2n) 33m(3n)	---	Spontaneous 3n in 1.6%	Fankhauser '38a,b; '39, '40, '41	Proc. Am. Phil. Soc. 79; A.R. 72; Genet. 24; A.R. 77; J.M. 68.
"	3-40m	---	Merogonic; Chrom. number variable	Fankhauser '32	A.R. 54.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Triturus viridescens	11m(n) 7-20m	---	Androgenic; Chrom. number variable	Kaylor '35, '39	A.R. 64; B.B. 77.
"	33m(3n)	---	From refrigerated eggs; 3n in 80%	Fankhauser & Griffiths '39; Griffiths '41	Proc. Nat. Acad. Sci. 25; Genet. 26.
"	54m(5n)	---	5n naturally appeared.	Fankhauser '41	Genet. 26.
"	2n, 3n, n	---	From eggs treated with cold & heat.	Fankhauser '42, F. & watson '42 a,b, F. '45, F. & Godwin '48	Biol. Symp. 6: Proc. Nat. Acad. Sci. 28: A.R. 84: Q. Rev. Biol. 20: Proc. Nat. Acad. Sci. 34.
Tylototriton andersoni	24s	12♂(1,11)	---	Sato '41	Kagaku 11.
"	24s	---	---	Makino '50	La Kromosomo 6.

ANURA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Bufonidae					
Bufo americanus	---	11♂(1,11)	X-Y♂?	Witschi '43	Cyt. 4.
B. arenarum	22s	"	Sex chrom. unknown.	Saez, Rojas & Robertis '34a, '34b, '36a,b	C.R.S.B. 117; Rev. Soc. Argentina Biol. 10; Inst. Mus. Nac. Plata, 2; Z.Z. M.A. 24.
B. bufo japonicus	"	"	X-X♂?	Iriki '29; Minouchi & Iriki '31	Z.M. (Jap.) 41; M.C.S. Kyoto I. U. Ser. B, 6.
B. bufo	22s	11♂(1)	22 V's	Wickbom '45, '49	Hered. 31, 35.
B. calamita	---	12♀(1)	---	Bataillon '10	A.Z.E.G. Ser. V, 6.
"	22s	11♂(1,11)	---	Stohler '27a, '27b, '28	B.Z. 47; Verh., Schweiz Nat. Ges. 108; Z.Z.M.A. 7.

Species	Chromosome Number 2n	n	Remarks	Observer	References
B. calamita	22s	11♂(1)	22 V's	Wickbom '45,'49	Hered. 31, 35.
B. canorus	---	"	X-Y♂?	Witschi '33	Cyt. 4.
B. fowleri	---	"	"	"	"
B. lentiginosus	24s 24o	12♂(1,11) 12♀(1,11)	---	King '01,'02, '05,'07,'08	J.M. 17; A.A. 21; B.B. 9; A.J.A. 7; J.M. 19.
"	---	11♂(1,11)	X-Y♂?	Witschi '33	Cyt. 4.
B. quercicus	---	"	"	"	"
Bufo radderi	22s	11♂(1,11)	---	Sato '36	Z.M. (Jap.) 48.
B. regularis	---	"	---	Wickbom '49	Hered. 35.
B. sachalinensis	22s	"	---	Makino '30, '32	Z.M. (Jap.) 42; P.I.A. (Tokyo) 8.
B. viridis	22s,22o	"	---	Stohler '26, '27a,'27b,'28	B.Z. 46; 47; Verh. Schweiz Nat. Ges. 108; Z.Z.M.A. 7.
"	22s	11♂(1)	---	Beccari '26a,b	C.R. Assoc. Anat. (Liege) 21; Ann. Anat. Path. Mem.-Chir. 3.
"	"	11♂(1,11)	Sex chrom. unknown.	Galgano '33	A.I.A.E. 32.
"	"	11♂(1)	22 V's	Wickbom '45	Hered. 31.
B. vulgaris	---	8-10♀(1), 8♀(11)	---	Carnoy & Lebrun'00, Lebrun '01	L.C. 17, 19.
"	18-24o	---	---	Della Valle '07	Atti R.Acad. Sci. Napoli, Ser, IIa, 13.
"	---	8-9♀(1)	---	Bataillon '10	A.Z.E.G. Ser. V, 6.
"	22s,22o	11♂(1,11)	---	Stohler'27a, '27b, '28	B.Z. 47; Verh. Schweiz Nat. Ges. 108; Z.Z.M.A. 7.
"	22s	"	Sex chrom. unknown.	Galgano '33	A.I.A.E. 32.

Species	Chromosome Number 2n	n	Remarks	Observer	References
B. vulgaris	22s,24m	---	---	Poska-Teiss'33	Z.Z.M.A. 17.
"	22s	11♂(1)	22 V's	Wickbom '45	Hered. 31.
Discoglossidae					
Alytes obstetricans	32s	16♂(1)	---	Janssens & Willems '09	L.C. 25.
"	36s	18♂(1)	12 V's	Wickbom '49	Hered. 35.
Bombinator igneus	---	6-7♀(11)	---	Lebrun '01	L.C. 19.
Bombinator pachypus	24s	12♂(1,11)	Sex chrom. unknown.	Galgano '33	A.I.A.E. 32.
Bombina orientalis	"	"	---	Sato '35,'38	Z.M. (Jap.) 47; J.S. Hiroshima U. Ser. B, 6.
B. bombina	24s	12♂(1)	24 V's	Wickbom '49	Hered. 35.
B. variegata	"	"	"	"	"
Dyscoglossus pictus	28s	---	20 V's	Wickbom '45,'49	Hered. 31, 35.
Engystomidae					
Cacopoides tornieri	28s	14♂(1,11)	---	Sato '36	Z.M. (Jap.) 48.
Hylidae					
Acris crepitans	22s	11♂(1)	22 V's	Bushnell, Bushnell & Parker '39	Jour. Tennesse Acad. Sci. 14.
A. gryllus	"	"	"	"	"
Hyla arborea	24s	12♂(1,11)	Sex chrom. unknown.	Galgano '33	A.I.A.E. 32.
"	"	"	24 V's	Wickbom '45	Hered. 31.
H. arborea japonica	"	"	X-X♂?	Iriki '30, '32a,b	M,C.S. Kyoto I.U. Ser. B, 5; S.R. Tokyo B.D. Ser. B, 1.
H. avivoca	24s	12♂(1)	24 V's	Bushnell, Bushnell & Parker '39	J. Tennesse Acad. Sci. 14.

Species	Chromosome Number 2n	n	Remarks	Observer	References
H. cinerea	24s	12♂(1)	24 V's	Bushnell, Bushnell & Parker '39	J. Tennesse Acad. Sci. 14.
H. versicolor	"	"	"	"	"
Pelobatidae					
Pelodytes punctatus	---	6♀(1)	---	Bataillon '10	A.Z.E.G. Ser. V, 6.
Pelobates fuscus	26s	13 (1)	26 V's	Wickbom '45, '49	Hered. 31, 35.
Pipidae					
Xenopus laevis	36s	18 (1)	12 V's	"	"
Ranidae					
Polypedates buergeri	26s	13♂(1,11)	---	Sato '34	Z.M. (Jap.) 46.
Rana agilis	26s	---	---	Matthey '47	Sci. Genetica 3.
R. arvalis	24s	12♂(1)	24 V's	Wickbom '45	Hered. 31.
"	26s	13♂(1)	26 V's	Cei '46	Monit. Zool. Ital. 55.
R. catesbiana	26●	---	---	Swingle '17	B.B. 33.
"	28s	14♂(1)	Larval testes	Swingle '21	J.E.Z. 32.
"	26s	13♂(1,11)	26 V's	Makino '47	La Kromosomo 3-4.
R. dalmatina	26s	13♂(1)	26 V's	Cei '46	Monit. Zool. Ital. 55.
R. exculenta	24m	---	---	Schottländer '38	A.M.A. 31.
"	"	---	---	vom Rath '95	A.M.A. 46.
"	16s	---	---	Champy '13	A.Z.E.G. 52.
"	ca. 25s	13♂(1) 12,13♂(11)	X-0♂?	Levy '15	A.M.A. 86.
"	12-28m	---	R. escul.♀ x Bufo viridis♂	Hertwig G. u.P. '20	A.M.A. 94.
"	30-38m	---	Pseudohybrid	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
R. exculenta	13–39m	---	Geno- and androgenic	Dalcq '30, '32	Ann. Bull. Soc. Roy. Sci. Med. Nat. Bruxelles; A.B. 43.
"	26s	13♂(1,11)	Sex chrom. unknown.	Galgano 31a, 31b, '31c, '33a, '33b, '34, '35	M.Z. Italiano, 41, 42; A.I.A.E. 31, 32; M.Z. Italiano, 45; A.I.A.E. 34.
"	26s	13♂(1)	26 V's	Wickbam '45	Hered. 31.
"	"	"	"	Cei '46	Monit. Zool. Ital. 55.
R. graeca	"	"	"	"	"
R. japonica	26s	---	---	Kawamura '39, '43	Z.M. (Jap.) 51,55.
"	39m(3n)	---	Artif. parthenogenesis	Kawamura '39a, '39b, '40	J.S. Hiroshima U. Ser. B, 7; Z.M. (Jap.) 51; J.S. Hiroshima U. Ser. B, 8.
"	26s	13♂(1,11)	---	Kobayashi '46	Shizen-Kenkyu Nov. '46.
R. japonica ♀ x R. temporaria ♂	25s	---	Meiosis irregular in ♂ I. Allopolyploids produced by refrigeration of F_1 eggs.	Kawamura '42, '43a, b	Jap. J.G. 18; Z.M. (Jap.) 55, 55.
R. limnocharies	26s	13♂(1,11)	---	Sato '33, '34	P.I.A. Tokyo 9; Z.M. (Jap.) 46.
R. nigromaculata	"	"	X-X♂?	Iriki '28, '32	Z.M. (Jap.) 40; S.R. Tokyo B.D. Sec. B, 1.
"	"	13♂(1)	---	Ting '36	Peking Nat. Hist. Bull. 13.
"	13m(n) 26m(2n) 39m(3n) 52m(4n) 78m(6n) etc.	---	In larvae of artif. parth. n, 2n, 3n, 4n, 6n & myxoploids occur.	Kawamura '37, '39a, b, '40, '41	Nippon Gakuzyutsu-Kyokai 12; J.S. Hiroshima U. Ser. B, 6, 7, 8; Z.M. (Jap.) 53.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Rana nigromaculata	39s(3n) 39o(")	---	From refrigerated eggs	Kawamura'41a, '41b, '43	P.I.A. (Tokyo) 17; Z.M. (Jap.) 53; Jap. J.G. 19.
R. nigromaculata x R. plancyi	26s	13♂(1)	Meiosis regular	Ting '39	Peking Nat. Hist. Bull. 13.
R. palustris	13m(n) 26m(2n) 39m(3n)	---	Parth. larva. n, 2n, 3n & mixoploids	Parmenter '32, '33	A.R. 54; J.E.Z. 66.
R. pipiens	25s,26o	13♂(1) 12,13♂(11)	X-0♂?	Swingle '17	B.B. 33.
" ('Leopard frog')	20s	---	Parth. larva	Loeb '18	Proc. Nat. Acad. Sci. Wash. 4.
"	26s,26o	13♂(1)	"	Parmenter '20, '25	J.G.P. 2, 8.
"	13(n),26(2n), 39(3n)m	---	Parth. Larva. n,2n,3n & mixoploid	Parmenter '26, '32, '33	A.R. 34, 54; J.E.Z. 66.
"	13(n),26(2n), 36-39(3n)m	---	Androgenic larva.	Porter '38, '39, '41	A.R. 72; B.B. 77, 80.
R. plancyi	26s	13♂(1)	---	Ting '39	Peking Nat. Hist. Bull. 13.
R. rugosa	"	13♂(1,11)	X-X0♂?	Iriki '28, '32	Z.M. (Jap.) 40; S.R. Tokyo B.D. Sec. B, 1.
R. tigrina	"	13♂(1)	---	Asana	Unpublished.
R. temporaria	---	8♂(1)	---	Bertacchini '96	Int. Monats. Anat. Phys. 13.
"	---	8-10♀(1) 10♀(11)	---	Carnoy & Lebrun '00; Lebrun '01	L.C. 17, 19.
" (R. fusca)	24s	12♂(1,11)	---	vom Rath '95	A.M.A. 46.
" (")	12m	12♀(1)	Parth. Larva.	Bataillon '10	A.Z.E.G. Ser. V, 6.
" (")	ca. 20m	---	"	Brachet '11	A.B. 26.
" (")	8-24m	---	"	Levy '13, '20	A.M.A. 82; Sitz. Preuss. Akad. Wiss.

Species	Chromosome Number 2n	n	Remarks	Observer	References
R. temporaria (R. fusca)	13-27m	---	Parth. larva	Hovasse '20, '22a, '22b	C.R.A.S. 170; 174; B.B. Fr. Pel. 56.
"	26s	13♂(1,11)	X-Y♂?	Witschi '22, '24	Z.I.A.V. 27; Z.Z.M.A. 1.
"	"	"	---	Makino '32, '46	P.I.A. (Tokyo) 8; La Kromosomo 2.
Rana temporaria	26s	13♂(1,11)	Sex chrom. unknown.	Galgano '33	A.I.A.E. 31.
"	26m	---	---	Prokofieva'35	Cyt. 6.
('Frosch')	16m	---	Blood cell	Dekhuyzen'91	A.A. 6.
('Grenouille')	24m	---	Parth. larvae	Dehorne '10	C.R.A.S. 150.
"	13m(n) 26m(2n), 39m(3n)	---	Parth. larvae	Parmenter '37, '40	A.R. 70; J.M. 66.
"	24s	---	---	Kawamura '43	Z.M. (Jap.) 55.
"	26s	13♂(1)	26 V's	Wickbom '45	Hered. 31.
"	24s	---	---	Kobayashi '46	Shizen-Kenkyu Nov. '46.
R. t. ornati-ventris	"	12♂(1,11)	---	"	"
(Rana sp.)	26s	13♂(1)	---	Goldschmidt'20	A.Zf. 15.
Rhacophorus schlegelii schlegelii	26s	13♂(1,11)	---	Makino '32	P.I.A. (Tokyo)8.

REPTILIA

CROCODILIA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Alligator mississippiensis	32s	16♂(1)	---	Risley '42	A.R. 84.
"	"	---	10 V's occur.	Matthey '47	Sci. Genetica 3.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Chelonidae					
Caretta caretta olivacea	58s 57o	---	X-X♂,X0♀	Nakamura '37, '49	Jap. J.G. 13; La Kromosomo 5-6.
Chelonia japonica	56s 55o	---	XX♂,X0♀	Oguma '42	Kaibogaku-Zassi 20.
Cinosternidae					
Sternotherus odoratus	50s	25♂(1,11)	—	Risley '36	Cyt. 7.
Testudinidae					
Chrysemys cinerea	---	25♂(1)	—	Glascock '14	Thesis Univ. Wisconsin (1914).
Chrysemys marginata	---	17♂(1)	X-0♂	Jordon '14	Sci. 39.
Cistudo carolina	---	16♂(1)	"	"	"
Clemmys japonica	52s	26♂(1)	X-X♂	Nakamura '35	M.S.C. Kyoto I.U. Ser. B, 10.
Clemmys mutica	52s	26♂(1)	"	Nakamura '37, '49	Jap. J.G. 13; La Kromosomo 5-6.
Cyclemys flavomarginata	52s	26♂(1,11)	"	"	"
Emys orbicularis (=E. europaea)	50s	25♂(1)	"	Matthey '30, '31	Bull. Soc. Vaud. Sci. Nat. 57; R. Suisse Z. 38.
"	"	"	---	Wickbom '45	Hered. 31.
Geoemyda spengleri japonica	52s	26♂(1)	X-X♂; 4n spermatocytes appear	Nakamura '37, '49	Jap. J.G. 13; La Kromosomo 5-6.
Ocadia sinensis	52s	26♂(1)	X-X♂	Nakamura '49	La Kromosomo 5-6.
Testudo graeca	54-60s	---	---	Matthey '31	R. Suisse Z. 38.
Trionychidae					
Amyda japonica	64s 63o	32♂(1,11) 31+X, ♀(1)	X-X♂,X-0♀	Oguma '36,'37	Jap. J.G. 12; J.G. 34.

RHYNCHOCEPHALIA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Sphenodon punctatum	36s	18♂(1,11)	---	Keenan '32	J. Anat. 67.

LACERTILIA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Agamidae					
Agama stellio	36s	18♂(1,11)	X-X♂	Matthey '29, '31	C.R. Soc. Phys. Geneve 46; R. Suisse Z. 38.
Calotes versicolor	34s 33o	17♂(1)	X-X♂, X-O♀	Makino & Asana '48	Chrom. 3.
Japarula polygonata	46s	23♂(1,11)	---	Momma '48, Momma & Makino '49	Z.M. (Jap.) 58; Cyt. 15.
J. swinhonis	46s	23♂(1,11)	X-X♂	Nakamura '31, '35	P.I.A. (Tokyo) 7; M.C.S. Kyoto I. U. Ser. B, 10.
Sitana ponticeriana	46s 45o	23♂(1)	X-X♂, X-O♀	Makino & Asana '48	Chrom. 3.
Uromastix hardwicki	36s	18♂(1,11)	X-X♂	Matthey '29, '31	C.R. Soc. Phys. Geneve 46; R. Suisse Z. 38.
"	34s	---	"	Makino & Asana '48, '50	Chrom. 3; Iden-Sogo-Kenkyu 1.
Amphisbaenidae					
Rhineura floridana	46s	23♂(1,11)	"	Matthey '32, '33	C.R.S.B. 110; R. Suisse Z. 40.
Trogonophis wiegmanni	36s	18♂(1,11)	"	Matthey '31, '32	Bull. Soc. Vaud. Sci. Nat. 57; A.Z.E.G. 74.
Anguidae					
Anguis fragilis	---	12♀(1)	---	Loyez '05	A.A.M. 8.
"	36?m	18?♀(1)	---	Trinci '08	Mem. R.Acad. Sci. Bologna, Ser. VI, 5.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Anguis fragilis	ca. 43s	22♂(1)	X-O♂?	Dalcq '20a,b, '21	C.R.S.B. 83; A.B. 31.
"	43s	22♂(1,11)	X-X♂; 1 V-chrom. in 2n.	Matthey '29, '31a,b	C.R.Soc. Phys. Geneve 46; Bull. Soc. Vaud. Sci. Nat. 57; R. Suisse Z. 38.
"	44s 44o	22♂(1)	X-Y♀? Sex chrom. unknown.	Margot '46	R. Suisse Z. 53.
Gerrhonotus kingi	45s	---	X-X♂; 1V chrom. in 2n	Matthey '29, 31,a,b	C.R. Soc. Phys. Geneve 46; Bull. Soc. Vaud. Sci. Nat. 57; R. Suisse Z. 38.
Gerrhonotus scincicauda (=G. caeruleus)	44,45s	22♂(1)	X-X♂; 1V chrom. in 2n	Matthey '29, 31a,b, '32, '33	C.R. Soc. Phys. Geneve 46; Bull. Soc. Vaud. Sci. Nat. 57; R. Suisse Z. 38; C.R.S.B. 110; R. Suisse Z. 40.
Ophisaurus ventralis	30s	15♂(1)	X-X♂	Matthey '29, '31a,b	C.R. Soc. Phys. Geneve 46; Bull. Soc. Vaud. Sci. Nat. 57; R. Suisse Z. 38.
Pseudopus apus	44s	22♂(1,11)	"	"	"
Aniellidae					
Aniella pulchra	24s	---	"	Matthey '31a,b	Bull. Soc. Vaud. Sci. Nat. 57; R. Suisse Z. 38.
Chamaeleontidae					
Chamaeleon vulgaris	24s	12♂(1,11)	"	Matthey '29, '31	C.R. Soc. Phys. Geneve 46; R. Suisse Z. 38.
"	24o, 24s	---	X-Y♀? Sex chrom. unknown.	Matthey '43	Arch. Jul. Klaus-Stift. Vererb. 18.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Eublepharidae					
Eublepharis variegatus	32s	16♂(1,11)	X-Y♀? Sex chrom. unknown.	Matthey '32a, '32b, '33	C.R.S.B. 110; Bull. Soc. Vaud. Sci. Nat. 57; R. Suisse Z. 40.
Geckonidae					
Gehyla variegata ogasawarasimae	63o	---	X-O♀	Makino & Momma '49	Cyt. 15.
Gekko japonicus	38s	19♂(1,11)	"	Nakamura '31, '32	P.I.A. (Tokyo) 7; Cyt. 3.
"	---	20?♂(1)	XY-O♂?	Su-Hsuen '33	J.M. 54.
Gymnodactylus milliusi	38s	19♂(1,11)	X-X♂	Matthey 32a, 32b, 33	C.R.S.B. 110; Bull. Soc. Vaud. Sci. Nat. 57; R. Suisse Z. 40.
Hemidactylus bowringii	46s	23♂(1,11)	"	Nakamura '31, '32	P.I.A. (Tokyo) 7; Cyt. 3.
H. flaviviridis	46s	23♂(1)	---	Asana & Mahabale '41	Current Sci. 10.
"	"	"	---	Makino & Asana '50	Iden-Sogo-Kenkyu 1.
H. frenatus	46s	23♂(1)	---	Momma '48, Makino & Momma '49	Z.M. (Jap.) 58; Cyt. 15.
Tarentola mauretanica	42s	21♂(1,11)	X-X♂	Matthey '29, '31	C.R. Soc. Phys. Geneve 46; R. Suisse Z. 38.
Gerrhosauridae					
Gerrhosaurus flavigularis	36s	18♂(1,11)	"	Matthey '32, '33	C.R.S.B. 110; R.Suisse Z. 40.
Helodermatidae					
Heloderma suspectum	38s	19♂(1,11)	"	Matthey '31a,b	Bull. Soc. Vaud. Sci. Nat. 57; R. Suisse Z. 38.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Iguanidae					
Anolis carolinensis	34s	17♂(1) 16,17♂(11)	XX-O♂?	Painter '21	J.E.Z. 34.
"	36s	18♂(1,11)	X-X♂	Matthey '29, '31	C.R. Soc. Phys. Geneve 46; R.Suisse Z. 38.
Crotaphytus collaris	36-38s	18?♂(1)	XX-O♂?	Painter '21	J.E.Z. 34.
Holbrookia texana	34?s	18-19♂(1)	X-O?	"	"
Sceloporus spinosus	22s	11♂(1)	XX-O♂?	"	"
Sceloporus undulates consobrinus	30?s	14-17♂(1)	"	"	"
Uta ornata	"	14-15♂(1)	"	"	"
Lacertidae					
Lacerta agilis	20-28s	10-15♂(1)	---	Tellyesniezky '97	Math. Natwiss. Ber. Hungarn 13.
"	38s	19♂(1,11)	X-X♂	Matthey '29, '31	C.R. Soc. Phys. Geneve 46; R. Suisse Z. 38.
Lacerta muralis	"	"	"	"	"
Lacerta stirpium	24o	8-12♀(1)	---	Loyez '05	A.A.M. 8.
Lacerta viridis	38s	19♂(1,11)	X-X♂	Matthey '29, '31	C.R. Soc. Phys. Geneve 46; R. Suisse Z. 38
Lacerta vivipara	38s	---	"	Matthey '31	R. Suisse Z. 38.
"	36s,35o,♀m	18♂(1,11)	X-X♂,X-O♀	Oguma '34a,b	Z.M. (Jap.) 46; A.B. 45.
"	---	18♂(1)	Early accounts ('31) corrected	Matthey '34	C.R.S.B. 117.
"	36s	---	---	Nogusa '44	Jap. J.G. 20.
"	36s 36o	---	X-Y♀? Sex chrom. unknown	Margot '46	R. Suisse Z. 53.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Lacerta ocellata	36s	18♂(1,11)	—	Matthey '38, '39	C.R.S.B. 127; Cyt. 10.
Psammodromus hipanicus	38s	19♂	---	Matthey '39	Cyt. 10.
Takydromus tachydromoides	"	19♂(1,11)	X-X♂	Nakamura '28, '35	M.C.S. Kyoto I.U. Ser. B, 4, 10.
"	"	—	—	Nogusa '44	Jap. J.G. 20.
Takydromus formosanus	"	19♂(1,11)	X-X♂	Nakamura '31	P.I.A. (Tokyo) 7; M.C.S. Kyoto I.U. Ser. B, 10.
Takydromus septemtrionalis	"	"	"	"	"
Takydromus smaragdinus	"	"	---	Nogusa '44	Jap. J.G. 20.
Tropidosaurus eligirus	"	"	X-X♂	Matthey '31b	R. Suisse Z. 38.
Scincidae					
Chalcides tridactylus	---	14♂(1)	X-X♂	Matthey '29, '31	C.R. Soc. Phys. Geneve 46; R. Suisse Z. 38.
Cryptobrephalus nigropunctatus	28s	14♂(1,11)	---	Makino & Momma '49	Cyt. 15.
Eumeces latiscutatus	26s	13♂(1,11)	X-X♂	Nakamura '31a, '31b	P.I.A. (Tokyo) 7; Cyt. 2.
E. elegans	26s	---	---	Momma '48; Makino & Momma '49	Z.M. (Jap.) 58; Cyt. 15.
E. marginatus	"	---	---	"	"
Mabuya macularia	26s	---	---	Asana & Mahabale '41	Current Sci. 10.
"	32s	16♂(1)	---	Makino & Asana '50	Iden-Sogo-Kenkyu 1.
Scincus officinalis	32s	16♂(1,11)	X-X♂	Matthey '29, '31	C.R. Soc. Phys. Geneve 46; R. Suisse Z. 38.
Sphenomorphus indicus	28s	14♂(1,11)	---	Momma '48, Makino & Momma '49	Z.M. (Jap.) 58; Cyt. 15

Species	Chromosome Number 2n	n	Remarks	Observer	References
Tejiidae					
Ameiva surinamensis	50s	25♂(1)	X-X♂	Matthey 33a,b	C.R.S.B. 112; R. Suisse Z. 40.
Cnemidophorus gularis	---	20?♂(1)	XX-0♂?	Painter '21	J.E.Z. 34.
Cnemidophorus sexlineatus	46s	23♂(1,11)	X-X♂	Matthey '32a,b, '33	C.R.S.B. 110; Bull. Soc. Phys. Geneve 46; R. Suisse Z. 40.
Tupinambis teguixin	36s	18♂(1,11)	"	Matthey '32, '33a,b	C.R.S.B. 110, 112; R. Suisse Z. 38.
Varanidae					
Varanus gouldi	40s	20♂(1,11)	"	Matthey '31a,b	Bull. Soc. Vaud. Sci. Nat. 57; R. Suisse Z. 38.
Xantusiidae					
Xantusia henschawi	42s	21♂(1)	"	"	"
Zonuridae					
Zonurus cataphractus	46s	23♂(1,11)	"	Matthey '29, '31a,b	C.R. Soc. Phys. Geneve 46; Bull. Soc. Vaud. Sci. Nat. 57; R. Suisse Z. 38.

OPHIDIA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Colubridae					
Coelopeltis lacertina	42s	21♂(1)	X-X♂	Matthey '31	R. Suisse Z. 38.
Coronella austriaca	36s	18♂(1)	"	"	"
Dinodon rufozonatum	46s	23♂(1,11)	"	Nakamura '35	M.C.S. Kyoto I.U. Ser. B, 10.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Elaphe quadrivirgata	36s	18♂(1,11)	X-X♂	Nakamura '27, '29, '35	P.I.A. (Tokyo) 3; Z.M. (Jap.) 41; M.C.S. Kyoto I. U. Ser. B, 10.
E. climacophora	"	18♂(1)	"	Nakamura '29, '35	Z.M. (Jap.) 41; M.C.S. Kyoto I. U. Ser. B, 10.
Holarchus formosanus	"	"	"	Nakamura '35	M.C.S. Kyoto I.U. Ser. B, 10.
Macropistodon rudis carinatus	46s	23♂(1)	"	"	"
Natrix tigrina	40s	20♂(1,11)	"	Nakamura '27, '28	P.I.A. (Tokyo) 3; M:C.S. Kyoto I. U. Ser. B, 4.
Tarbophis fallax	36s	18♂(1)	"	Matthey '31	R. Suisse Z. 38.
Thamnophis butleri	37s	"	XX-Y♂	Thatsher '22	Sci. 56.
Tropidonotus natrix	36s	"	X-X♂	Matthey '31	R. Suisse Z. 38.
T. viperinus	"	---	"	"	"
Zamenis gemonensis	"	---	"	"	"
Zoacys nigrorginatus oshimai	"	---	"	Nakamura '35	M.C.S. Kyoto I.U. Ser. B, 10.
Elepidae					
Bungarus multicinctus	36s	18♂(1,11)	"	"	"
Naja naja atra	38s	19♂(1,11)	X-X♂; 4n spermatocytes appear.	"	"
Hydridae					
Laticauda semifasciata	"	"	X-X♂	"	"
Crotalidae					
Agkistrodon acutus	36s	18♂(1)	"	"	"
A. halys blomhoffii	"	18♂(1,11)	"	Nakamura '27, '35	P.I.A. (Tokyo) 3; M.C.S. Kyoto I. U. Ser. B, 10.

OPHIDIA (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Trimeresurus mucrosquamatus	36s	18♂(1,11)	X-X♂	Nakamura '35	M.C.S. Kyoto I.U. Ser. B, 10.
T. gramineus steinegeri	"	"	"	"	"
T. flavoviridis	36s	---	---	Momma '48, Makino & Momma '49	Z.M. (Jap.) 58; Cyt. 15.
T. okinavensis	"	---	---	"	"
Viperidae					
vipera aspis	42s	21♂(1)	X-X♂	Matthey '28, '29, '31, '33	C.R. Soc. Phys. Geneve 45; B.Z. 49; R. Suisse Z. 38, 40.
V. berus sachaliensis	36s	18♂(1,11)	---	Makino & Momma '49	Cyt. 15.

AVES
RATITAE
STRUTHIONES

Species	Chromosome Number 2n	n	Remarks	Observer	References
Dromiceiidae					
Dromiceius novaehollandiae ('Emu')	40-76m	---	Number variable in embryos	Shiwago & Peschkowskaja '36	Genetica 18.
Rheidae					
Rhea americana ('Nandu')	42-68m	---	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Corvidae					
Coloeus monedula	56-67♀,♂m	---	X-X♂,X-0♀; X=J_2 or $_3$*	Pogossianz '37	Biol. Zhurn. 6.
Pica pica sericea	82s,81o	---	X-0♀	Suzuki '49	Jap. J.G. 24.
Fringillidae					
Linota cannabina	64-65o,♂m	---	X-X♂,X-0♀; X=v_5*	Unger '36	Z.Z.M.A. 25.
Passer domesticus	40-48♀,♂m	---	---	Pogossianz '37	Biol. Zhurn. 6.
"	54-60s, ♀,♂m	23♂(1)?	X-X♂,X-0♀; X=v_4*	Riley '38	Cyt. 9.
Turdidae					
Turdus merula	60-85s,♀, ♂m	---	"	Unger '36	Z.Z.M.A. 25.
Turdus pilaris	74-81m	---	"	Pogossianz '37	Biol. Zhurn. 6.

CUCULI

Species	Chromosome Number 2n	n	Remarks	Observer	References
Cuculus canorus	72s	36♂(1)	---	Yamashina '46	La Kromosome 1.

PSITTACI

Species	Chromosome Number 2n	n	Remarks	Observer	References
Psittacidae					
Melopstittacus undulatus	50-60m	---	♀ hetero, X=V_1	Crew & Lamy '35	J.G. 30.
"	42s 42♀,♂m	21♂(1)	X-X♂,X-Y♀; X=R_2, Y=r	Jentsch '35	Z.Z.M.A. 23.
"	58s	29♂(1)	---	Yamashina '46	La Kromosomo 1.

*J_2=the 2nd largest J-shaped chromosome. v_4=the 4th largest V-shaped chromosome, etc. X=v_4 indicates that the X chromosome is represented by the fourth largest V-shaped element.

ACCIPITRES

Species	Chromosome Number 2n	n	Remarks	Observer	References
Falconidae					
Cerchneis tinnunculus	37m	---	---	Sokolovskaja '40	Trudy Inst. Genet. 13.

GRESSORES

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ardea cinerea	76s	38♂(1)	---	Yamashina '50	La Kromosomo 6.
Egretta garzetta	"	"	---	"	"
Nycticorax nycticorax	"	"	---	"	"

ANSERES

Species	Chromosome Number 2n	n	Remarks	Observer	References
Anatidae					
Aix sponsa	80s	40♂(1)	---	Yamashina '50, '51	Auk (Bull. Am. Ornith. Union), 1950 Iden-Sogo-Kenkyu 2.
Anas boschas	ca. 16s	8♂(1,11)	---	Schöneberg '13	A.M.A. 83.
"	43-49♀, ♂m	---	X-X♂, X-0♀; X=R_1*	Alichanian '36	Zool. Jour. (Moskow) 15.
Anas platyrhyncha domestica ('Indian runner duck')	76♂m 77♀m	38♂(1)	Z-Z♂, W_w-Z♀; W=J_1, Z=V_1*	Werner '25, '27	A.R. 31; B.B. 52.
" ('Khaki campbell')	34-62♀, ♂m	---	X-X♂, X-0♀; X=V_1	Sokolowskaya '35	Z.B. (Moskaw) 4.
" ('Aylesbury')	48-69♀, ♂m	---	X-X♂, X-0♀; X=V_1	Crew & Koller '36	Proc. Roy. Soc. Edinb. 56.

*R_1-the 1st largest rod-shaped chrom. V_1=the first largest V-shaped chrom. r_5=the 5th largest rod-shaped chrom.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Anas platyrhyncha domestica ('Domestic duck')	80s,79o	40♂(1)	X-X♂,X-O♀; X=r_5*	Oguma '38	Ann. Zool. Jap. 17.
" "	"	---	---	Suzuki '39	Jap. J.G. 15.
" "	"	---	X-X♂,X-O♀; X=r_5	Yamashina '41, '42, '43	Jap. J.G. 17; Cyt. 12; Jap. J.G. 19.
Anas platyrhyncha	80s	40♂(1)	---	Yamashina '50, '51	Auk (Bull. Am. Ornith. Union), 1950; Iden-Sogo-Kenkyu 2.
A. acuta	"	---	---	"	"
A. crecca	"	---	---	"	"
A. falcata	"	---	---	"	"
A. penelope	"	---	---	"	"
A. strepera	"	---	---	"	"
Anser albifrons	82s	41♂(1)	---	"	"
Aythya fuligula	80s	---	---	"	"
A. marila	"	---	---	"	"
A. ferina	ca. 16s	8♂(1,11)	---	Schöneberg '13	A.M.A. 83.
Branta bernicla	84s	42♂(1)	---	Yamashina '50, '51	Auk (Bull. Am. Ornith. Union), 1950; Iden-Sogo-Kenkyu.
Bucephala clangula	80s	---	---	"	"
Cairina moschata	ca. 16s	8♂(1,11)	---	Schöneberg '13	A.M.A. 83.
Cairina moschata	34-62♀,♂m	---	X-X♂,X-O♀; X=R_1	Sokolowskaya '35	Z.B. (Moskaw) 4.
" ('Muscovy')	-72♀,♂m	---	X-X♂,X-O♀; X=V_1	Crew & Koller '36	Proc. Roy. Soc. Edinb. 56.
" ('Muscovy duck')	80s,79o	40♂(1)	X-X♂,X-O♀; X=r_5	Yamashina '41, '42, '43	Jap. J.G. 17; Cyt. 12; Jap. J.G. 19.

*r_5=the 5th largest rod-shaped chrom.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Carina moschata x Anas platyrhyncha	34-62♀,♂m	---	X-X♂,X-0♀; Similar in reciprocal.	Sokolowskaja '35	Z.B. (Moskaw) 4.
"	54-70♀,♂m	---	X-X♂,X-0♀; X=V_1; 1st div. irregular in F_1	Crew & Koller '36	Proc. Roy. Soc. Edinb. 56.
"	80s,79o	---	X-X♂,X-0♂; X=r_5. 1st div. irregular in F_1. Similar in reciprocal.	Yamashina '41, '42, '43	Jap. J.G. 17; Cyt. 12; Jap. J.G. 19.
Chenopis atra	80s	40♂(1)	---	Yamashina '50, '51	Auk (Bull. Am. Ornith. Union), 1950; Iden-Sogo-Kenkyu 2.
Clangula hyemalis	"	---	---	"	"
Cygnopsis cygnoid var. orientalis	82s, 81o	---	X-X♂,X-0♀; X=v_3	Oguma '42	Kaibogaku Zassi 20.
"	"	41♂(1)	"	Yamashina '50, '51	Auk (Bull. Am. Ornith. Union), 1950; Iden-Sogo-Kenkyu 2.
Cygnus cygnus	80s	---	---	"	"
Dendronetta galoriculata	84s	42♂(1)	---	"	"
Histrionicus histrionicus	80s	---	---	"	"
Lampronnesa sponsa	ca. 16s	8♂(1,11)	---	Schöneberg '13	A.M.A. 83.
Mareca penelope	"	"	---	"	"
Melanitta fusca	80s	---	---	Yamashina '50 '51	Auk (Bull. Am. Ornith. Union), 1950; Iden-Sogo-Kenkyu 2.
M. nigra	"	---	---	"	"
Mergus serrator	"	---	---	"	"

ANSERES (Continued)

Species	Chromosome Number 2n	n	Remarks	Observer	References
Spatula clypeata	80s	---	---	Yamashina '50	Auk (Bull. Am. Ornith. Union), July, '50.
Tadorna rutila	44-46m	---	---	Sokolowskaja '40	Trudy Inst. Genet. 13.

STEGANOPODES

Species	Chromosome Number 2n	n	Remarks	Observer	References
Phalacrocoracidae					
Phalacrocorax carbo hanedae	70s	35♂(1)	---	Oguma '37	J.F.S. Hokkaido I. U. Ser. VI, 5.

TUBINARES

Species	Chromosome Number 2n	n	Remarks	Observer	References
Procellariidae					
Oceanodroma leucorrhoa leucorrhoa	74s,73o	37♂(1)	X-X♂,X-0♂; X=r_3	Oguma '37,'42	J.F.S. Hokkaido I.U. Ser. VI, 5; Kaibogaku Zassi 20.

PYGOPODES

Species	Chromosome Number 2n	n	Remarks	Observer	References
Podiceps ruficallis	80s 79o	---	X-0♀	Yamashina '50	La Kromosomo 6.

COLUMBAE

Species	Chromosome Number 2n	n	Remarks	Observer	References
Columbidae					
Columba livia domestica	16s	8♂(1),4♂(11)	—	Guyer '02	Bull. Univ. Cincinnati, Ser. II, 2.
"	16m	8♀(1,11)	---	Haper '04	A.J.A. 3.
"	ca. 16s	8♂(1),4♂(11)	---	Smith '27	Q.J.M.S. 58.
"	62s,♂m 61♀m	31♂(1,11)	X-X♂,X-0♀; X=V_1	Oguma '27	J. Coll. Agr. Hokkaido Imp. Univ. 16.
" ('Pigeon')	50+♀,♂m	---	X-X♂,X-0♀;	Hance '32	A.R. 54.
"	31-62m	---	Number variable in soma	Shiwago '39	B.B. Fr. Bel. 73.
"	80s,79o	40♂(1)	X-X♂,X-0♀; X=v_4	Yamashina & Makino '46	Seibutu 1.
Streptopelia risoria (Turtur risorius)	16s	8♂(1),4♂(11)	---	Guyer '02	Bull. Univ. Cincinnati, Ser. II, 2.
" ('Dove')	50+♀,♂m	---	X-X♂,X-0♀	Hance '32	A.R. 54.
"	66s	33♂(1)	—	Tange & Nakahara '39	Folia Anat. Jap. 17.
S. decaocto var. risoria	76s,75o	38♂(1)	X-X♂,X-0♀; X=v_4	Yamashina & Makino '46	Seibutu 1.
S. orientalis	75o	—	X-0♀; X=v_4	"	"
S. dec. risoria x S. orient.	---	38♂(1)	---	"	"

LIMICOLAE

Species	Chromosome Number 2n	n	Remarks	Observer	References
Charadrius dubius	78s	39♂(1)	---	Yamashina '46	La Kromosomo 1.

LARI

Species	Chromosome Number 2n	n	Remarks	Observer	References
Laridae					
Sternula albifrons sinensis	66s	33♂(1)	—	Oguma '37	J.F.S. Hokkaido I. U. Ser. VI, 5.
Larus argentatus vegae	66s	33♂(1)	—	Oguma '37	J.F.S. Hokkaido I. U. Ser. VI, 5.

ALCAE

Species	Chromosome Number 2n	n	Remarks	Observer	References
Alcidae					
Brachyramphus marmorata perdix	50s	25♂(1)	—	Oguma '37	J.F.S. Hokkaido I. U. Ser. VI, 5.
Lunda cirrhata	"	"	—	"	"

ALECTORIDES

Species	Chromosome Number 2n	n	Remarks	Observer	References
Fulica atra	86s 85o	—	X-0♀	Yamashina '50	La Kromosomo 6.

GALLI

Species	Chromosome Number 2n	n	Remarks	Observer	References
Phasianidae					
Bambusicola thoracica	78s	—	—	Yamashina '46	La Kromosomo 1.
Chrysolophus amherstiae	50-60m	—	—	Scaccini '39	A.I.A.E. 42.
"	82s	41♂(1)	X-X♂, X-0♀; X=v_5	Yamashina '41, '43	Jap. J.G. 17; J.F.S. Hokkaido I.U. Ser: VI, 8.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ch. pictus	50-60m	---	---	Sceccini '39	A.I.A.E. 42.
"	82s	41♂(1)	X-X♂, X-0♀, X=V_5	Yamashina '41, '43	Jap. J.G. 17; J.F.S. Hokkaido I.U. Ser. VI, 8.
Ch. pictus x Ch. amherstiae	"	"	Meiosis regular in F_1	"	"
Coturnix coturnix japonica	44s	22♂(1,11)	---	Kobayashi '37	Z.M. (Jap.) 49.
"	78s	39♂(1)	---	Oguma '38	Ann. Zool. Jap. 17.
Gallus gallus domesticus	---	6?♀(1)	---	Leyez '06	A.A.M. 8.
" ('Huhn')	---	12-16♀(1)	---	Sonnenbrodt '06	A.M.A. 72.
"	12m	---	---	Lecaillon '10	A.A.M. 12.
"	17-19s	9♂(1), 4,5♂(11)	X-0♂	Guyer '09	A.A. 34.
"	18s, ♂m	"	X-X♂, X-0♀	Guyer '16	B.B. 31.
" ('Gold campine fowl')	18-20s	8-10♂(1)	---	Cutler '18	J.G. 7.
" ('Chicken')	ca. 32s	---	Miss Stevens figure	Boring '23	Sci. 58.
"	32♀, ♂m	---	X-X♂, X-Y♀; X=R_1, Y=s	Shiwago '24	Sci. 60.
"	35-34♀, ♂m	---	X-0♀; X=V_1	Hance '23, '24, '25	A.R. 26; Sci. 59; A.R. 31.
"	35-36s 35-36♀, ♂m	---	X-X♂, X-0♀; X=V_1	Hance '26	J.M. 43.
"	60-70m(pro) 35-40m(meta)	---	X-0♀	Hance '26a,b	B.B. 50,51.
" ('Huhn')	32s 30-44♀, ♂m	---	X-X♂; Number variable in racial hybrids.	Akkeringa '27	Z.M.A.F. 8.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Gallus gallus domesticus ('Huhn')	---	---	2V's in ♂, 1V in ♀	Goldsmith '28	J.M. 46.
" ('Huhn')	36-38m	---	Tissue culture	Kemp '30	Z.Z.M.A. 11.
" ('Huhn')	29-39m	---	"	Saguchi '30	Zyt. Studien, III (Kanasawa).
" ('Chicken')	66±2♂m 65±2♀m	33♂(1)	X-X♂,X-O♀; X=V_1	White '32	J.G. 26.
" ('Haushuhn')	69-70♀,♂m (pro) 30-45♀,♂m (meta)	---	X-X♂,X-O♀; X=V_1	Popoff '33	Z.Z.M.A. 17.
"	32-71s,o,♀,♂m	---	X-X♂,X-O♀; X=v_5. Microchr. inconstant in number	Sokolow & Trofimow '33; Sokolow, Timiakow & Trofimow '36a,b	Z.I.A.V. 65; Z. B. (Moskaw) 5; Cyt. 7.
"	44-61s,o,♀,♂m	---	"	Unger '36	Z.Z.M.A. 25.
"	50-70m	---	X-X♂,X-O♀; X=V_1	Saaccini '37	Rivist. Biol. 22.
"	78s,77o	---	X-X♂,X-O♀; X=v_5	Oguma '38,'42	Ann. Zool. Jap. 17; Kaibogaku-Zassi 20.
"	51-60s,o	38-40♀(1)	X-X♂,X-O♀; X=v_5. Spermatogenesis in sex reversed ♀	Miller '38	A.R. 70.
"	78s,77o	39♂(1,11)	X-X♂,X-O♀; X=v_5. Accounts of 1930 corrected	Suzuki '30,'39	Z.M. (Jap.) 46; Jap. J.G. 15.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Gallus gallus domesticus ('Haushuhn')	78s, 77o	39♂(1)	X-X♂,X-O♀; X=v_5. Number constant by races.	Yamashina '41, '43, '44	Jap. J.G. 17; J.F.S. Hokkaido I.U. Ser. VI, 8; Cyt. 13.
Gallus gallus x Phasianus colchicus	80s,79o	---	Germ cells degenerate early in meiosis.	Yamashina '41, '43	Jap. J.G. 17; J.F.S. Hokkaido I.U. Ser. VI, 8.
Gennaeus beli	50-60m	---	---	Scaccini '39	A.I.A.E. 42.
G. nyctemerus	"	---	---	"	"
G. swinhoii	81o(82s)	41♂(1)	X-X♂,X-O♀; X=v_5	Yamashina '46	Seibutu 1.
Hierophasis swinhoii	50-60m	---	---	Scaccini '39	A.I.A.E. 42.
Meleagris gallopavo ('Truthennen')	46♂m 46♀m	---	X-X♂,X-Y♀; X=V_1, Y=s	Shiwago '29	Z.Z.M.A. 9.
" ('Domestic turkey')	76♂m 77♀m	38♂(1)	Z-Z♂,W_W-Z♀; W=J_1, Z=V_1	Werner '31	B.B. 61.
"	Number not given	---	X-X♂,X-O♀; X=v_5. Number of micro-chroms. inconstant.	Sokolow, Tiniakow & Trofimow '34, '36a, '36b	Z.B. (Moskaw) 3, 5; Cyt. 7.
"	50-55m	---	---	Scaccini '39	A.I.A.E. 42.
"	82s,81o	41♂(1)	X-X♂,X-O♀; X=v_5	Yamashina '46	Seibutu 1.
Numida meleagris domestica ('Domestic guinea')	17s	9♂(1), 8,9♂(11)	X-O♂	Guyer '09	A.A. 34.
"	—	—	X-X♂,X-O♀; X=v_6. Number of micro-chroms. inconstant.	Sokolow, Tiniakow & Trofimow '36a, '36b	B.Z. (Moskaw) 5; Cyt. 7.
"	78s,77o	39♂(1,11)	X-X♂,X-O♀; X=v_5	Suzuki '39	Jap. J.G. 15.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Numida meleagris domestica ('Domestic guinea')	50m	---	---	Scaccini '39, '42	A.I.A.E. 42,47.
"	76s,75o	38♂(1)	X-X♂;X=v_5	Yamashina '46	Seibutu 1.
Numida mel. ♀ x Gallus g. dom. ♂	76o	---	X-O♀;X=v_5	"	"
Nycthemerus argentatus	Number not given	---	X-X♂,X-O♀; X=v_4. Number of micro-chroms. inconstant.	Sokolow, Tiniakow & Trofimow '36a, '36b	B.Z. (Moskaw) 5; Cyt. 7.
Pavo cristatus	"	---	X-X♂,X-O♀; X=v_5. Number of micro-chroms. inconstant.	Tiniakow '34; Sokolow, Tiniakow & Trofimow '36a,'36b	"
Phasianus colchicus	40-63s,o ♀,♂m	---	X-X♂,X-O♀; X=v_4. Number of micro-chroms. inconstant.	Trofimow & Tiniakow '33; Sokolow, Tiniakow & Trofimow '36a,'36b	Z.I.A.V. 65; Z.B. (Moskaw) 5; Cyt. 7.
"	78s,77o	39♂(1,11)	X-X♂,X-O♀; X=v_5	Suzuki '39	Jap. J.G. 15.
Phasianus colchicus karpowi	82s,81o	41♂(1)	"	Yamashina '41, '43	Jap. J.G. 17; J.F.S. Hokkaido I.U. Ser. VI, 8.
Ph. col. versicolor	"	---	"	"	"
"	"	---	"	Oguma '42	Kaibogaku-Zassi 20.
Phasianus torquatus	52-61s,o	---	X-X♂,X-O♀; X=v_4. Number of micro-chroms. inconstant.	Unger '36	Z.Z.M.A. 25.
('Pheasant')	20-22s	10-11♂(1), 8♂(1)	---	Cutler '18	J.G. 7.
Phasianus x Gallus	18-20s	---	---	Cutler '18	J.G. 7.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Syrmaticus reevesi	50-60m	---	---	Scaccini '39	A.I.A.E. 42.
Sy. soemmerringii	82s	41♂(1)	X-X♂,X-0♀; X=v_5	Yamashina '41, '43	Jap. J.G. 17; J.F.S. Hokkaido I.U. Ser. VI, 8.
Sy. soemmerringii x Chrysolophus pictus	"	"	Meiosis in F_1 partially regular.	"	"
Tetraonidae					
Lyrurus tetrix (Tetrao tetrix)	---	---	X-X♂,X-0♀, X=v_5. Number of micro-chroms. inconstant.	Sokolow, Tiniakow & Trofimow '36a, '36b	Z.B. (Moskau) 5; Cyt. 7.

MAMMALIA*
PROTOTHERIA
MONOTREMATA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Echidna aculeata	---	8-12♂(1)	—	Benda '06	(Semon Zool. (Forsch. Australia u. Malay (Archipel. Livraison, 27.
Ornithorhynchus anatinus	---	"	---	"	
"	70±10s	---	Close to chroms of Sauropsida	White	From Matthey-Chroms. des Bertebres(1948).

*The X and Y chromosomes of mammals are separated pre-reductionally in the 1st division generally, but post-reductionally in the 2nd division in some instances, as occurred in certain species of murine rodents. Further, in some species, they separate in both these ways. For the sake of convenience, notes have been given in the column of remarks. The formula of sex chromosomes without remarks, demotes the usual case where pre-reduction occurs.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Didelphyidae					
Didelphys aurita	---	12?♀(1,11)	---	Hill '18	Q.J.M.S. 63.
"	22s	11♂(1)	X-Y♂	Dreyfus '39 Dreyfus & Souza '41	Biologia General 3; Univ. Sao Paulo Bol. Fac. Phil. Sc. Letr. III. Biol. gen. 17.
Didelphys paraguayensis	"	---	"	Saez '30,'31	Con. Inter. Biol. Montevideo 7-12; ▲ .N. 65.
Didelphys virginiana	17s,♂m	9♂(1), 4,5♂(11)	X-O♂	Jordan '11	A.Zf. 7.
"	---	11♀(1)	---	Hartman '19	J.M. 32.
"	22s,♂m 22♀m	11♂(1,11)	X-Y♂	Painter '21, '22,'24	Sci. 53; J.E.Z. 35, 39.
"	22♀,♂m	---	X-Y♂,X-X♀	Hoy & George '29	J.M. 47.
Lutreolina crassicaudata	22s	---	X-Y♂	Saez '38	Roy. Soc. Argentina Biol. 14.
Dasyuridae					
Dasyurus maculatus	14s	---	X-Y♀	Greenwood'23	Q.J.M.S. 67.
"	"	7♂(1,11)	"	Koller'36a,b	Cyt. 7; J.G. 32.
Dasyurus viverrinus	"	7♂(1)	"	Drummond '38	Cyt. 8.
Sarcophilus ursinus	14s,♀m	---	X-Y♂,X-X♀	Greenwood'23	Q.J.M.S. 67.
"	14s	7♂(1,11)	X-Y♂	Koller'36a,b	Cyt. 7; J.G. 32.
Macropodidae					
Bettongia lesueuri	22s	11♂(1)	"	Drummond '33	Q.J.M.S. 76.
Bettongia penicillata	28s	---	"	"	"
Macropus ualabatus	12s,♀m	6♂(1,11)	X-Y♂;X-X♀; X associates with an autosome	Agar '23	Q.J.M.S. 67.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Macropus giganteus	22s	11♂(1)	X-Y♂	Binder '27	Z.Z.M.A. 5.
Macropus parryi	16s	8♂(1,11)	"	Matthey '34, '36	C.R.S.B. 117; A.B. 47.
Potorous tridactyla	12s,♀m	6♂(1,11)	X-Y♂,X-X♀	Altmann & Ellery '25	Q.J.M.S. 69.
Setonyx brachyurus	22s	---	X-Y♂. 4n gonia occur.	Drummond '33	Q.J.M.S. 76.
Peramelidae					
Isoodon obesulus	14s	7♂(1)	X-Y♂	Drummond '33	Q.J.M.S. 76.
Perameles sp.	---	8♂(1)	---	Benda '06	Semon Zool. Forsch. Australia u. Malay Archipel. Livraison 7.
Phalangeridae					
Petauroidei volans	22s	---	X-Y♂	Agar '23	Q.J.M.S. 67.
Petaurus breviceps	"	---	"	Drummond '33	Q.J.M.S. 76.
Phascolarctus cinereus	16s,♀m	8♂(1,11)	X-Y♂,X-X♀	Greenwood'23	Q.J.M.S. 67.
"	16s	8♂(11)	X-Y♂	Koller '36	J.G. 32.
Phalangista sp.	---	8♂(1)	---	Benda '06	Semon Zool. Forsch. Australia u. Malay Archipel. Livraison 7.
Pseudochirus peregrinus	20s,♀m	10♂(1,11)	X-Y♂,X-X♀	Altmann & Ellery '25	Q.J.M.S. 69.
"	20s	10♂(1)	X-Y♂	Koller '36	J.G. 32.
Trichosurus vulpecula	20s,♀m	10♂(1,11)	X-Y♂,X-X♀	Altmann & Ellery '25	Q.J.M.S. 69.
"	20s	"	X-Y♂	Koller '36	J.G. 32.
Phascolomyidae					
Phascolomys mitchelli	---	7♂(1)	X-Y♂	Altmann & Ellery '25	Q.J.M.S. 69.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Megachiroptera					
Pteropodidae					
Pteropus dasymallus inopinatus	38s	19♂(1,11)	X-Y♂	Makino '48	B.B. 94.
Microchiroptera					
Molossidae					
Nyctinomus mexicanus	48m	---	Prob. X-Y♂	Painter '25a,b	Sci. 61; A.N. 59.
Nycteridae					
Nycteris sp.	42s	---	X-Y♂	Bovey '49	R. Suisse Z. 56.
Rhinolophidae					
Rhinolophus euryale	58s	29♂(1)	X-Y♂	Bovey '49	R. Suisse Z. 56.
R. ferrum-equinum	"	"	"	"	"
R. ferrum-equinum nippon	---	"	"	Makino '48	B.B. 94.
R. hipposideros	---	16♀(1)	---	Athias '12	Arch. Inst. Bact. Cam. Pest. Lisbonne, 3.
"	54s	27♂(1)	X-Y♂	Matthey et Bovey '48 Bovey '49	Experientia 4; R. Suisse Z. 56.
Vespertilionidae					
Barbastella barbastellus	32s	16♂(1)	X-Y♂	Bovey '49	R. Suisse Z. 56.
Myotis daubentoni	42s	21♂(1)	"	"	"
Myotis mystacinus	44s	---	X-Y♂	"	"
M. emarginatus	"	---	"	"	"
M. myotis	44s	22♂(1)	"	"	"
Miniopterus schreibersii	46s	23♂(1)	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pipistrellus pipistrella	---	21♂(1)	X-Y♂	Matthey & Bovey '48, Bovey '49	Experientia 4; R. Suisse Z. 56.
"	42s	---	"	Muldal '48	From Matthey-Chrom. des Vertebres, 1948.
P. nathusii	---	22♂(1)	"	Bovey '49	R. Suisse Z. 56.
Plecotus auritus	32s	16♂(1)	"	"	"
Vesperugo noctula	---	9-10♀(1,11)	---	Van der Stricht '10	Mem. Acad. Roy. Belgique, Ser. 2,2.
Vesperugo serotinus	---	15-22♀(1) 18-24♀(11)	---	Athias '12	Arch. Inst. Bact. Cam. Pest. Lisbonne 3.
('Bat') Species unknown	24+s	---	X-O♂	Jordan '12	A.A. 40.
"	40?s	---	♂ hetero.?	Hance '17	A.R. 12.

INSECTIVORA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Erinaceidae					
Erinaceus europeaeus ('European hedgehog')	48s	---	X-Y♂	Painter '25a,b	Sci. 62; A.N. 59.
"	48s	---	---	Muldal '48	From Matthey-Chrom. des Vertebres, 1948.
"	"	24♂(1)	X-Y♂	Bovey '49a,b	R. Suisse Z. 56; Experientia 5.
Macroscelidae					
Elephantulus myurus jamersoni	14s	?♂(1) 7♀(1)	X-Y♂, X-X♀	Brenner '46	South Afr. J. Med. Sci. 11 (Biol. Suppl.).
Soricidae					
Crocidula murina	40s	20♂(1,11)	"	Tateishi '37, '38	Jap. J.G. 13; Ann. Zool. Jap. 17.

Species	Chromosome Number 2n	n	Remarks	Observer	References
C. russula	42s	21♂(1)	X-Y	Bovey '49a,b	R. Suisse Z. 56; Experientia 5.
Neomys fodiens	52s	26♂(1)	"	"	"
Sorex araneus	23s	11♂(1) 11,12♂(11)	X_1X_2-Y♂	Bovey '48, '49a,b	Arch. Jul. Klaus-Stift. Vererb. 23; Experientia 5; R. Suisse Z. 56.
Talpidae					
Mogera insularis	32s	16♂(1,11)	"	"	"
Talpa europaea	38s	19♂(1)	"	Koller '36	P.R.S. London 121.
"	34s	17♂(1)	X-Y♂	Bovey '49a,b	R. Suisse Z. 56; Experientia 5.

EDENTATA—XENARTHA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Dasypodidae					
Tatusia novemcinctum ('9-banded armadillo')	31?s,32o	14-10♀(1)	X-0♂?	Newman & Patterson '10; Newman '12	J.M. 21; B.B. 23.
Tatusia novemcinctum ('Armadillo')	60♀,♂m	—	"	Painter '25a,b	Sci. 61; A.N. 59.

RODENTIA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Duplicidentata					
Leporidae					
Lepus cuniculus ('Kaninchen')	24?m	—	—	Flemming '98	A.A. 14.
" ('Lapin')	41-43o 36-46(42)m	—	—	Winiwarter '99,'00	A.B. 16, 17.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Lepus cuniculus ('Rabbit')	28-36s	14-18♂(1)	---	Barrett '07	P.R.S. London, B. 79.
" "	22s	11-12♂(1) 11♂(11)	X-Y♂	Bachhuber '16	B.B. 30.
" "	44-54s	20+ ♂(1)	X-O♂	Masui '23	J. Coll. Agr. I.U. Tokyo, 8.
" "	44s 44♀,♂m	22♂(1)	X-Y♂, X-X♀	Painter'25a, '25b, '25c, '26a, '26b	Sci. 61; A.N. 59; A.R. 31; Sci. 64; J.M. 43.
"	---	22♂(1)	X-Y♂	Minouchi & Ohta '32	Z.M. (Jap.) 44.
"	44s	22♂(1,11)	"	Tateishi '36	Z.M. (Jap.) 48.
"	ca. 71m	---	Colchicine treated egg, 4n?	Pincus'39a,b	J.E.Z. 82; J.H. 30.
"	44s	22♂(1)	X-Y♂	Makino '44	Z.M. (Jap.) 56.
"	44s,♂m	---	---	McMillion '42	Bull. Pittsb. Univ. 38.
"	4n ? m	---	Polytene chroms. in cancer	Biesele '45	Cancer Res. 6.
"	---	22♀(1)	---	Vara & Pesonen '47	Acta Abstr. Gyn. Scand. 27.
"	44s	---	---	Muldal '48	From Matthey-Chrom. des Vertebres, 1948.
Lepus formosus	48s	24♂(1,11)	"	Tateishi '35	Z.M. (Jap.) 48.
Lepus gichiganus ainu	---	24♂(1)	"	Makino '44	Z.M. (Jap.) 56.
Simplicidentata					
Capromyidae					
Myocastor coypus	42s	21♂(1,11)	X-Y♂	Makino '47	J.F.S. Hokkaido I.U. Ser. VI, 9.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Caviidae					
Cavia cobaya ('Meerschweinchen')	16s	8♂(1)	---	Von Bardeleben '92	Verh. Anat. Ges. Wien 6.
" ('Meerschweinchen')	24±m	---	---	Flemming '98	A.A. 14.
Cavia cobaya ('Guinea-pig')	32s	16♂(1,11)	---	Moore & Walker '06	Liverpool Univ. Rep. (1906)
" "	56?s	28♂(1)	X-Y♂	Stevens'11a,b	B.B. 20,21.
"	16m	8♀(1,11)	---	Lams '13	A.B. 28.
"	38s	19♂(1,11)	X-Y♂	Harman & Root '26	B.B. 51.
"	60-64m	---	"	Painter '26	Sci. 64.
"	65s 44,55,66m	33♂(1) 32,33♂(11)	X-O♂	Mols '28	A.B. 38.
" ('Guinea-pig')	62±2s	31♂(1) 30+♂(11)	X-Y♂	League '28	J.M. 46.
"	64s	32♂(1,11)	"	Makino '44, '47	Z.M. (Jap.) 56; J.F.S. Hokkaido I.U. VI, 9.
Cavia porcellus	---	24-23♀(1) ca. 24♀(11)	---	Athias '12	Arch. Inst. Bact. Cam. Pest. Lisbonne 3.
Geomyidae					
Geomys breviceps breviceps	84?s	---	X-Y♂	Cross '31	J.M. 52.
Heteromyidae					
Dipodomys merriami merriami	86?s	---	X-Y♂	"	"
Perognathus fallax fallax	44s	---	"	"	"
Hystricidae					
Hystrix cristeta	48s	---	---	Muldal '48	From Matthey-Chron. des Vertebres. 1948.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Muridae-Cricetinae					
Cricetus auratus	38s	19♂(1)	X-Y♂; pre. or post. (18.4%).	Koller '38, '46	J.G. 36; Proc. Roy. Soc. London, B, 133.
"	44♀m	21-22♀(1)	X-X♀	Husted, Hopkins & Moore '45	J.H. 36.
"	38s	---	---	Muldal '48	From Matthey-Chrom. des Vertebres, 1948.
Cricetulus griseus	14s	---	X-Y♂	Pontecorvo '43	Proc. Roy. Soc. Edinb. B, 62.
Peromyscus boylei attwateri	48s	---	X-Y♂	Cross '31, '38	J.M. 52; Cyt. 8.
P. californicus insignus	"	---	"	Cross '31a,b '38.	A.R. 51; J.M. 52; Cyt. 8.
P. calif. californicus	"	---	"	Cross '38	Cyt. 8.
P. eremicus eremicus	ca. 58s	---	"	Cross '31, '38	A.R. 51; Cyt. 8.
P. er. fraterculus	58s	---	"	Cross '38	Cyt. 8.
P. gossypinus palmarius	48s	---	"	"	"
P. leucopus texanus	"	---	"	"	"
P. l. noveboracensis	"	---	"	"	"
P. maniculatus gambeli	"	---	"	Cross '31a, '31b, '38	A.R. 51; J.M. 52; Cyt. 8.
P.m. hollesteri	52s	---	"	Cross '31, '38	J.M. 52; Cyt. 8.
P.m. bairdii	48s	---	"	Cross '38	Cyt. 8.
P.m. blandus	"	---	"	"	"
P.m. sonoriensis	"	---	"	"	"
P.m. artemisiae	48s	---	X-Y♂	Cross '38	Cyt. 8.
P.m. osgoodi	"	---	"	"	"
P. polionotus polionotus	"	---	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
P. truei truei	48s	---	X-Y♂	Cross '38	Cyt. 8.
Neotoma floridanus attwateri	52s	---	"	Cross '31	J.M. 52.
Sigmodon hispidus texianus	54s	---	"	"	"
Tscherkia triton	30 ♀m	15♀(1)	X-X♀	Makino '49	Cyt. 15.
Muridae-Microtinae					
Arvicola scherman exitus (Arvicola scherman terrestris)	36s	18♂(1)	X-Y♂. X,Y pre. or post. in ratio 50: 100*	Matthey & Renaud '35; Renaud '38; Matthey '38	C.R.S.B. 120; R. Suisse Z. 45; J.G. 36.
Eothenomys melanogaster	---	28♂(1)	X-Y♂	Tateishi '37	Z.M. (Jap.) 49.
Evotomys (Clethrionomys) bedfordiae	55s	28♂(1) 27,28♂(11)	X-O♂	Oguma '35a,b	Nippon Gakuzyutsu-Kyokai 10; J.F.S. Hokkaido I.U. Ser. VI, 4.
"	---	28♀(1,11)	X-X♀	Makino & Shigemoro '43	Igaku & Seibutsugaku 4.
Evotomys glareolus	56s	28♂(1,11)	X-Y♂; pre	Matthey & Renaud '35; Renaud '38	C.R.S.B. 120; R. Suisse Z. 45.
Clethrionomys (Evotomys) rutilus mikado	---	28♂(1)	---	Mekino '49	Cyt. 15.
Microtus agrestis	50s	25♂(I,II) 25♀(1)	X-Y♂; pre; X-X♀.	Matthey '50	L.C. 53.
M. ag. orcadensis	42s	---	---	Muldal '48	From Matthey-Chrom. des Vertebres,1948.
M. arvalis	46s	23♂(1,11)	X-Y♂; pre. or post.	Renaud '38	R. Suisse Z. 45.
M. incertus	---	28-34♀(1,11)	---	Athias '12	Arch. Inst. Bact. Camp. Pest. Lisbonne 3.

*Pre.=pre-reductional separation of X and Y, namely X disjoins from Y in I division.
Post.=post-reductional separation of X and Y, namely X disjoins from Y in II division.

Species	Chromosome Number 2n	n	Remarks	Observer	References
M. kikuchii	28s	14♂(1)	X-Y♂	Tateishi '37	Z.M. (Jap.) 49.
"	30s	15♂(1,11)	"	Makino '49a,b	Cyt. 15; Ann. Zool. Jap. 23.
M. montebelli	31s	16♂(1)	X-0♂	Oguma '37	Cyt. Fujii Jub.-Vol.
M. nivalis	56s	28♂(1)	X-Y♂	Matthey '47	Sci. Genetica 3.
M. ratticeps	30s	15♂(1)	X-Y♂	Makino '49a,b	Cyt. 15; Ann. Zool. Jap. 23.
"	46s	---	"	Muldal '49	John Innes Hortic. Inst. 39 Ann. Rep. (1948).
M. townsendii	50s	---	X-Y♂	Cross '31	J.M. 52.
Muridae-Murinae					
Apodemus agrarius	---	24♂(1,11)	X-Y♂; post: or pre.	Matthey '36, '38, '47	Z.Z.M.A. 25; J.G. 36; Arch. Jul. Klaus-Stift. Vererb. 22.
"	48s	"	X-Y♂; post.	Makino '49, '50	Cyt. 15; Iden-Sogo-Kenkyu 1.
A. agrarius ningpoensis	50s	25♂(1,11)	"	Tateishi '34, '35	Trans. Nat. Hist. Soc. Formosa 24; Nippon Gakuzyustu-Kyokai 10.
" (A. ag. insulaemus)	48s	24♂(1,11)	X-Y♂; post.	Makino '49, '50	Cyt. 15; Iden-Sogo-Kenkyu 1.
A. flavicollis	---	24♂(1,11)	X-Y♂; pre. or post.	Matthey '36, '47	Z.Z.M.A. 25; Arch. Jul. Klaus-Stift. Vererb. 22.
A. geisha	46s	23♂(1,11)	X-Y♂; pre.	Makino '49, '50	Cyt. 15; Iden-Sogo-Kenkyu 1.
A. hebridensis	48s	24♂(1)	X-Y♂; post.	Koller '39, '41	J.G. 37, 41.
A. semotus	48s	24♂(1)	X-Y♂; post.	Tateishi '34, '35	Trans. Nat. Hist. Soc. Formosa 24; Nippon Gakuzyutsu-Kyokai 10.

Species	Chromosome Number 2n	n	Remarks	Observer	References
A. semotus	48s	24♂(1,11)	X-Y♂; post.	Makino '49,'50	Cyt. 15; Iden-Sogo-Kenkyu 1.
A. speciosus speciosus	46s	23♂(1)	X-Y♂; post.	Tateishi '34, '35	Trans. Nat. Hist. Soc. Formosa 24; Nippon Gakuzyutsu-Kyokai 10.
"	50s	25♂(1,11)	"	Makino '49, '50	Cyt. 15; Iden-Sogo-Kenkyu 1.
A. spesiosus ainu	47s	24♂(1,11) 23,24(tid)	X-O♂; post.	Oguma '34a, '34b, '37	Jap. J.G. 9; Cyt. 5; Cyt. Fujii Jub.-Vol.
A. sylvaticus (Mus sylvaticus)	---	---	X-O♂?	Federley '19	Act. Soc. Sci. Fenn. 48.
"	48s	24♂(1,11)	X-Y♂; pre. or post.	Matthey '36a, '36b,'38,'47	A.B. 47; Z.Z.M.A. 25; J.G. 36; Arch. Jul. Klaus-Stift. Vererb. 22.
"	48s	"	"	Raynaud '36	C.R.A.S. 202.
"	48s	24♂(1)	X-Y♂; post-reductional in 92%	Koller '39,'41	J.G. 37,41.
Micromys minutus takasagoensis	68s	34♂(1)	X-Y♂	Mekino '34	Cyt. 13.
M. minutus	62s	---	---	Muldal '48	From Matthey-Chrom. des Vertebres, 1948.
Mus caroli (M. formosanus)	40s	20♂(1)	X-Y♂	Tateishi '35	Nippon Gakuzyutsu-Kyokai 10.
"	"	20♂(1,11)	"	Makino '41	J.F.S. Hokkaido I.U. Ser. VI, 7.
M. molossinus	"	"	"	Oguma '35a,b	Nippon Gakuzyutsu-Kyokai 10; J.F.S. Hokkaido I.U. Ser. VI, 4.
"	"	"	"	Makino '40,'41	Jap. J.G. 16; J.F.S. Hokkaido I.U. Ser. VI, 7.

Species	Chromosome Number 2n	n	Remarks	Observer	References
M. molossinus	---	20♀(1,11)	X-X♀	Makino '41a,b	Jap. J.G. 17; J.F.S. Hokkaido I.U. Ser. VI,7.
M. musculus	20?m	"	---	Tafani '89	Arch. Anat. Norm. Pathol. 5.
" ('Maus')	---	16♂(1)	---	Hermann'89	A.M.A. 34.
" ('Grau Maus')	24?o	---	---	Holl '93a,b	Verh. Anat. Ges. 7, Vers. 1893; S.B. Wien Akad. Wiss. 102.
" ('Weiss, grau, Tanz')	30m	16♀(1,11)	---	Sobotta '95, '07	A.M.A. 45; A. Hf. 35.
" ('Souris blanche')	10-12s	12-16♂(1,11)	---	Lukianow '98	Arch. Sci. Biol. St. Petersburg, 6.
" ('Mouse')	24s	---	---	Moore & Arnold '05	P.R.S. London, B 77.
"	---	12♀(1,11)	---	Gerlach '06	Bild. d. Richtungskörper bei mus. (Wiesbaden).
"	---	"	---	Lams & Doorme '07	A.B. 23.
" ('Albino')	---	8♀(1,11)	---	Melissinos '07	A.M.A. 70.
Mus musculus ('White mouse')	---	12-24♀(1) 12♀(11)	---	Coe & Kirkham '07; Kirkham '07,'08	Sci. 25; B.B. 12; Trans. Connecticut Acad. 13.
" ('White, black, hybrid')	---	20♀(1,11)	---	Long '08;Long & Mark '11	Sci. 27; Carnegie Inst. Publ. 142.
" ('White mouse')	---	12-24♀(1) 12-30♀(11)	---	Kingery '14, '17	B.B. 27; J.M. 30.
" ('House mouse')	---	20♂(1,11)	X in post-reductional?	Yocum '17	Univ. Californis Publ. 16.
" ('Domestic, wild')	40s	"	X-Y♂	Cox '26	J.M. 43.
" ('Weiss Maus')	24o	12♀(1)	---	Zdenko '26	Biol. General 2.
"	40s	20♂(1)	X-Y♂	Painter'28a,b	Genet. 13; A.N. 62.

Speceis	Chromosome Number 2n	n	Remarks	Observer	References
Mus musculus ('Maus')	32-36(ca. 40) m	---	Karzinome	Goldschmidt & Fischer '29	Zeits. Krebsf. 30.
" (")	21-44(40)m	---	Tissue culture	Kemp '30	Z.Z.M.A. 11.
"	21-175(36-40) m	---	Karzinome	Winge '30	Z.Z.M.A. 10.
"	ca. 36o	18♀(1)	---	Schachow '30	A.A. 69.
"	32-36, 40-44, 80,m	---	Tumor	Ludford '30	9th Sci. Rep. Imp. Canc. Res. Fund.
"	15-17m	---	Karzinome	Isibasi, Sinohara & Okada '31	Trans. Jap. Path. Soc. 21.
" ('Albino')	40s	20♂(1,11)	X-Y♂	Cutright '32	J.M. 54.
" (")	40♀,♂m	---	X-Y♂,X-X♀	Crew & Koller '32	J.G. 26.
"	40s	---	---	Butarin '35	Bull. Inst. Genet. (Moskaw) 10.
"	"	20♂(1)	X-Y♂	Tateishi '35	Nippon Gakuzyutsu-Kyokai 10.
"	"	20♂(1,11)	"	Matthey '36	A.B. 47.
" ('Albino')	40s	20♂(1,11)	X-X♂	Makino '40, '41	Jap. J.G. 16; J.F.S. Hokkaido I.U. Ser. VI, 7.
"	—	---	Break of chroms. in X-rayed animals	Koller & Auerbach '41	Nature 148.
"	±40,4n, 16n, etc.	---	Cancer	Biesele, Poyner & Painter '42	Univ. Texas Publ. 4243.
" ('Albino')	—	20♀(1,11)	X-X♀	Makino '41a,b	Jap. J.G. 17; J.F.S. Hokkaido I. U. Ser. VI, 7.
"	---	20♀(1,11)	2-3 chiasmata in each bivalents.	Guénin '46, '48	Arch. Jul. Klaus.-Stift. Vererb. 21; J.G. 49.
"	---	20♂(1)	Pachytene chrom. map.	Slizynski '49	J.G. 49.

Species	Chromosome Number 2n	n	Remarks	Observer	References
" ('Albino')	40,60,80, & hetero-ploids.	---	In eggs un-treated, and those of cold-& hot-treatments	Beatty & Fischberg'49	Nature 163.
"	38-47(2n) 77-83(4n)	---	In liver cells	Sato '49	Jap. J.G. 24.
M. musculus x M. molossinus	40s	20♂(1,11)	X-Y♂; Meiosis normal in F_1	Makino '41a,b	Jap. J.G. 17; J.F.S. Hokkaido I.U. Ser. VI, 7.
Mus wagneri	"	"	X-Y♂	Masui '23	J.Coll. Agr. I.U. Tokyo, 8.
"	"	"	X-Y♂; Gates(v,o)	Painter '27	Genet. 12.
" ('Albino')	"	"	X-Y♂	Mineuchi '28	Jap. J.Z. 1.
Nesokia (Bandicota) nemoriwaga taiwanus	44s	22♂(1)	"	Tateishi '35	Nippon Gakuzyutsu-Kyokai 10.
"	46s	23♂(1,11)	"	Makino '44	Cyt. 13.
Rattus confucianus culturatus	46s	23♂(1)	"	Tateishi '35	Nippon Gakuzyutsu-Kyokai, 10.
Rattus confucianus culturatus	46s	23♂(1,11)	X-Y♂	Makino '42, '43	Jap. J.G. 18; J.F.S. Hokkaido I.U. Ser. VI, 9.
R. fulvescens coxinga	42s 46s	21♂(1) 23♂(1)	"	Tateishi '35	Nippon Gakuzyutsu-Kyokai 10.
"	46s	23♂(1,11)	"	Makino '42, '43	Jap. J.G. 18; J.F.S. Hokkaido I.U. Ser. VI, 9.
R. losea	42s	21♂(1,11)	"	Tateishi '33, '35	Z.M. (Jap.) 45; Nippon Gakuzyutsu-Kyokai 10.
"	"	"	"	Makino '42, '43	Jap. J.G. 18; J.F.S. Hokkaido I.U. Ser. VI, 9.

Species	Chromosome Number 2n	n	Remarks	Observer	References
R. norvegicus('Rat')	32s	16♂(1)	—	Moore '93,94; Moore & Arnold '05; Moore & Walker '06	A.A. 8; Int. Monat. Anat. Phys. 11; P.R.S. Lond. B. 77; Liverpool Univ. Rep. 1906.
" ('Ratte')	—	12♂(1)	—	Lenhossek '98	A.M.A. 51.
" ('Wanderratte')	16s	8♂(1,11)	—	von Ebner '99	Sitz. Ber. Akad. Wiss. Wien, 108.
" ('Rat')	20-30s	ca. 12♂(1)	—	Regaud '01a, '01b, '09	C.R.S.B. 53; A.A.M. 4, 11.
" ('Weiss Ratte')	—	10-20♀(1) 8-16♀(11)	—	Sobotta & Burckard '01	A.Hf. 42.
" (Mus decumans 'albino')	24m	12♂(1,11)	—	Duesberg '08 a,b	A.Zf. 1,2.
" (")	24+s	16♂(1,11)	—	van Hoof '11	L.C. 27.
" ('Albino')	40♀	—	—	Pratt & Long '17	J.M. 29.
" (' ")	37s,♂m	19♂(1)	X-0♂	Allen '18,'19	J.M. 31; A.R. 16.
" (Mus decumans 'albino')	40s	—	—	Rauh '25	Z.A.E. 76.
" ('Albino')	42s	21♂(1,11)	X-Y♂	Pincus '27	J.M. 44.
" (")	"	21♂(1)	X-Y♂	Painter '26, '28	Sci. 64; Genet. 13.
" ('Albino' x 'Wild') (mixed rat strain)	62s	21♂(1) 21,31♂(11)	From matings of 2n,42 x 2n,62	Swezy '28, '29a,'29b	J.E.Z. 51; J.M. 48.
	42s	21♂(1) 21,31♂(11)			
	42m				
	62m				
	42♀m	21♀(1)			
	62♀m	31♀(1)			

Species	Chromosome Number 2n	n	Remarks	Observer	References
R. norvegicus ('Wild')	62s	21♂(1) 21,31♂(11)	---	Swezy '26,'28	Sci. 66; J.E.Z. 51.
	42s	21♂(1) 21,31♂(11)			
" ('Albino')	42s	21♂(1,11)	---	"	"
"	±4n	---	Walker rat sarcoma	Lewis & Lockwood '29	Bull. John Hopk. Hosp. 44.
"	n,2n	---	Sarcoma	Hirschfeld & Klee-Rawidowicz '30	Z. Krebsf. 30.
"	22-26, 65-70, 100-105	---	Cancer	Levine '31	Am. J. Canc. 15.
"	12-15-37	---	Sarcoma	Isibasi, Sinohara & Okada'31	Trans. Jap. Path. Soc. 21.
"	20-25, 80-90	---	"	Alexenko & Natensohn'32	Z. Krebsf. 38.
Rattus norvegicus ('Albino')	42s	21♂(1,11)	X-Y♂	Minouchi '28 a,b	Jap. J.Z. 1.
" ('Albino')	"	21♂(1)	"	Bryden '22,'33, '35	J.G. 26, 27; Cyt. 6.
" (")	"	"	X-Y♂; post-red. in 10%	Koller & Darlington'34	J.G. 29.
" ('Wild')	"	21♂(1,11)	X-Y♂	Oguma '35a,b	Nippon Gakuzyutsu-Kyokai 10; J.F.S. Hokkaido I.U. Ser. VI, 4.
" (")	"	21♂(1)	"	Tateishi '35	Nippon Gakuzyutsu-Kyokai 10.
" (Epimys norvegicus)	---	21♂(1)	"	Matthey '36, '38	A.B. 47; J.G. 36.
"	---	"	X-Y♂; Correction of 1918	Allen '40	J.M. 66.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Rattus norvegicus (Epimys norvegicus)	23-26-31, 35-44-52, 55-65-88-134	---	Azo-liver-cancer	Amano & Ando '40	Gann 34.
"	2n,4n	---	In regeneration of liver	Beams & King '42	A.R. 83.
"	42s	21♂(1,11)	X-Y♂; Chrom. Identical in wild and albino.	Makino '42a,b, '43	Jap. J.G. 18; J.F.S. Hokkaido I.U. Ser. VI, 8,9.
"	---	21♀(1,11)	X-X♀	Makino & Sigemoro '43	Igaku & Seibutsugaku 4.
"	42s	21♂(1) 21♀(1)	X-Y♂, X-X♀	Guénin '45, '48	Arch. Jul. Klaus-Stift. Vererb. 20; J.G. 49.
"	2n,4n	---	Benzopirene tumor. Fusion and frag. of chroms.	Casabona '48	Biol. Latina 1.
"	26-85	---	Yoshida-Ascites sarcoma	Yosida '48, Makino & Yosida '49	Oguma Comm. Vol. Cyt. Genet. (1); Jap. J.G. Suppl. 2.
"	42s	21♂(1)	In strain of albino x wild. Meiosis regular, & fertile in F_1, F_2 & F_3.	Makino '51	La Kromosomo 8.
R. rattus ('Albino')	---	8♀(1,11)	---	Melissinos '07	A.M.A. 70.
" ('Albino')	24+s	16♂(1,11)	---	van Hoof '11	L.C. 27.
R. rattus	40s	20♂(1,11)	X-Y♂	Pincus '27	J.M. 44.
" ('Wild')	42s	21♂(1)	"	Oguma '28, '35a,b	Z.M. (Jap.) 40; Nippon Gakuzyutsu-Kyokai 10; J.F.S. Hokkaido I.U. Ser VI, 4.

Species	Chromosome Number 2n	n	Remarks	Observer	References
R. r. rattus('Wild')	42s	21♂(1,11)	X-Y♂	Makino '42, '43	Jap. J.G. 18; J.F.S. Hokkaido I.U. Ser. VI,9.
R. rattus alexandrinus	40s	—	"	Cross '31	J.M. 52.
R. rattus rufescens	42s	21♂(1)	"	Tateishi '35	Nippon Gakuzyutsu-Kyokai 10.
Muscardinidae					
Dyromys nitedula untermedius	48s	24♂(1)	"	Matthey & Renaud '36; Renaud '38	C.R.S.B. 121; R. Suisse Z. 45.
Eliomys quercinus	—	16♀(1,11)	—	Athias '09, '12	A.A. 34; Arch. Inst. Bact. Cam. Pest. Lisbonne 3.
"	52s	26♂(1,11)	X-Y♂	Renaud '38	R. Suisse Z. 45.
Glis glis glis	62s	31♂(1)	X-Y♂; post-reductional?	Matthey & Renaud '36; Renaud '38	C.R.S.B. 121; R. Suisse Z. 45.
Muscardinus avellanarius	48s	24♂(1)	X-Y♂	"	"
Sciuridae					
Citellus columbianus columbianus	32s	—	X-Y♂	Wodsedalek '29	A.R. 44.
Citellus tridecemlineatus arenicola	50-54s	—	—	Cross '31	J.M. 52.
Glaucomys volans volans	52s	—	X-Y♂	"	"
Sciurus carolinensis carolinensis	48s	—	"	"	"
S. carolinensis leucotus	28s	14♂(1)	"	Koller '36	Proc. Roy. Soc. Edinburgh 56.
S. niger rufiventer	62s	—	"	Cross '31	J.M. 52.
S. niger limitis	"	—	"	"	"

Species	Chromosome Number 2n	n	Remarks	Observer	References
S. vulgaris	40s	---	X-Y♂	Muldal '49	John Innes Hortic. Inst. 39 Ann. Rep. (1948).
Tamiasciurus hudsonius	28s	---	"	Muldal '48	From Matthey-Chrom. des Vertebres, 1948.
('Ecureuil') Species unknown	24s	ca. 16♂(1)	---	van Molle '06,'07	L.C. 23, 24.

CARNIVORA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Fissipedia					
Canidae					
Alopex-Vulpes	43 s	---	F_1 between Alopex and Vulpes.	Wipe & Shakelford '49	Proc. Nat. Acad. Sci. 35.
Canis familiaris	64?m	---	---	vom Rath '94	B.Z. 14.
"	21s 22♀m	11♂(1) 10,11♂(11)	X-0♂	Malone '18	Trans. Am. Micr. Soc. 37.
" ('Dog')	50+s	---	Prob.X-Y♂	Painter '25	A.N. 59.
"	78♂,♀	39♂(1,11)	X-Y♂,X-X♀	Minouchi '28a,b	Jap. J.Z. 1.
"	78s	---	X-Y♂. 3 breeds.	Ahmed '40	Proc. Roy. Sci. Edinb. 61.
"	78s	39♂(1)	X-Y♂	Makino '49	Jap. J. Zootech. Sci. 19.
Nyctereutes viverrinus	42s	21♂(1,11)	X-Y♂	Minouchi '28, '29	Z.M. (Jap.) 40; Cyt. 1.
Vulpes fulvus	"	21♂(1)	"	Wodsedalek '31	A.R. 51.
Vulpes lagopus	---	26♂(1)	X-Y♂?	Andres '38	Cyt. 9.
Vulpes vulpes	---	17♂(1)	"	"	"
"	34s	17♂(1)	X-Y♂	Wipe & Shackelford '42.	Proc. Nat. Acad. Sci. 28.
"	32s	---	X-Y♂	Bishop '42	A.R. 84.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Vulpes vulpes	38s	19♂(1)	X-Y♂; silver fox	Makino '44, '47	Z.M. (Jap.) 56; J.F.S. Hokkaide I.U. VI, 9.
Felidae					
Felis domestica ('Variete belge')	35s 36o,♀m	18♂(1) 17,18♂(11)	X-O♂	Winiwarter & Sainmont '09; Winiwarter '14, '19, '22, '34, '38	A.B. 24; Bull. Acad. Roy. Belgique 4; A.B. 30; C.R. Ass. Anat. Dixsept. reunion; Bull. Acad. Roy. Belgique 20; A.B. 49.
Felis domestica ('Variete japonaise')	38s	19♂(1,11)	X-Y♂	Winiwarter '34, '38	Bull. Acad. Roy. Belgique 20; A.B. 49.
" ('Chat')	—	12♀(1)	—	van der Stricht '11	Mem. Acad. Roy. Belgique 2.
"	—	14-17♀(1,11)	—	Longley '11	A.J.A. 12.
" ('Hauskatze')	38o	—	—	Gutherz '18, '20	Sitz. Ges. Nat. Fr. Berlin 8; A.M.A. 94.
"	38s,o	19♂(1,11)	X-Y♂, X-X♀	Minouchi '28a, '28b; Minouchi & Ohta '32, '34	P.I.A. (Tokyo) 1; Z.M. (Jap.) 40, 44; Cyt. 5.
"	"	19♂(1)	X-Y♂	Matthey '34, '36	C.R.S.B. 117; A.B. 47.
"	38s	19♂(1)	X-Y♂; pre. or post.	Koller '41	Proc. Roy. Soc. Edinb. B, 61.
"	—	19♀(1)	—	Vara & Pesonen '47	Acta Abstr. Gyn. Scand. 27.
"	38s	—	—	Muldal '48	From Matthey-Chrom. des Vertebres, 1948.
"	"	19♂(1)	X-Y♂	Makino '49	Jap. J. Zootech. Sci. 19.
Felis bengalensis	"	"	"	Tateishi '41	Kagaku-Taiwan 9.
Mustelidae					
Martes foina	38s	19♂(1)	—	Ehrlich '49	R. Suisse Z. 56.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Mustela itatsi itatsi	38s	19♂(1,11)	X-Y♂	Makino '47	J.F.S. Hokkaido I.U. Ser. VI, 9.
M. vison	ca. 28s	ca. 14♂(1)	—	Shackelford & Wipe '47	Proc. Nat. Acad. Sci. 33.
Putorius furo	34s	—	X-Y♂	Koller '36	Proc. Roy. Soc. London, B 121.
Viverridae					
Mungos ichneumon ('Mongoose')	—	ca. 24♂(1)	Prob.X-0♂	Jordan '14	Carnegie Inst. Publ. 182.
Pinnipedia					
Otarridae					
Callorhinus alascanus	30s	15♂(1,11)	X-Y♂	Sterks '28	A.J.A. 40.

CETACEA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Delphinidae					
Phocoenoides dalli	44s	22♂(1,11)	X-Y♂	Makino '48	Chrom. 3.

UNGULATA

Species	Chromosome Number 2n	n	Remarks	Observer	References
Artiodactyla					
Bovidae					
Bos indicus	60s	30♂(1)	X-Y♂	Makino '44a,b	Z.M. (Jap.) 56; Cyt. 13.
Bos taurus ('Stier')	16s	—	—	von Bardeleben '92	Verh. Anat. Ges. Wien 6.
" ('Taureau')	20-25s	12♂(1,11)	—	Schoenfeld '02	A.B. 18.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Bos taurus('Taureau')	20-24s	12♂(1)	---	von Hoof '13	L.C. 30.
"	33s	17♂(1) 16,17♂(11)	X-0♂	Masui '19	J. Coll. Agr. Imp. Univ. Tokyo 3.
" ('Cattle')	37s,♂m 38o,♀m	19♂(1) 18,19♂(11) ca. 10♂(1)	X-0♂,X-X♀	Wodsedalek '20	B.B. 38.
Bos taurus('Rind')	60s	30♂(1,11)	X-Y♂	Krallinger '27, '28,'31	Verh, Anat. Ges. 1927; Art. Dtsch. Ges. Zuchtgskde 40; Arch. Tierernähr.-zucht. B 5.
"	"	"	X-Y♂: No racial difference	Makino '43, '44a,b	Bot. & Zool. 11; Z.M. (Jap.) 56; Cyt. 13.
Bubalus buffelus	56s	---	X-Y♂?	Pkakadze '39	C.R. Acad. Sci. U.R.S.S. 24.
"	48s	24♂(1,11)	X-Y♂	Makino '43, '44a,b	Bot. & Zool. 11; Z.M. (Jap.) 56; Cyt. 13.
Capra hircus	60s	30♂(1,11)	"	Sokolov '30	Bull. Bureau Genet. Acad. Sci. U.S.S. R. 8.
" ('Ziege')	60♂m	---	"	Shiwago '30, '31	J. Biol. Exp. 6; Z.Z.M.A. 13.
" (")	60s	30♂(1)	"	Krallinger '31	Arch. Tierernähr.-zucht B 5.
" ('Goat')	60m	---	Amnion	Berry '38	J.H. 29.
"	60s	30♂(1,11)	X-Y♂	Makino '43a,b, c, '44	Jap. J.G. 19; Bot. & Zool. 11; Cyt. 13; Z.M. (Jap.) 56.
"	60s	---	X-Y♂. ♂ intersex.	Makino '49	Iden-Sogo-Kenkyu 1.
Ovis aries ('Sheep')	33s,34o	17♂(1), 17♀(1)	X-0♂,X-X♂	Wodsedalek '22	A.R. 23.
" ('Schaf,Hammel')	48-53(54) ♂m	---	X-Y♂	Shiwago '30, '31	J. Biol. Exp. 6; Z.Z.M.A. 13.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Ovis aries ('Schaf')	60s	30♂(1) ca. 30♂(11)	X-Y♂	Krallinger '31	Arch. Tierernahr.-zucht B 5.
" (Interracil hybrid)	"	30♂(1)	---	Novikov '35	C.R. Acad. Sci. U.S.S.R. 4.
" ('Sheep')	"	"	X-Y♂	Bruce '35	Ph. D. Thesis, Univ. Pittsburgh.
" (")	—	"	---	Pchakadze '36	C.R. Acad. Sci. U.R.S.S. 3.
" (")	54s,m	27♂(1)	X-Y♂	Berry '38,'41	J.H. 29, 32.
"	54s	"	"	Ahmed '40	Proc. Roy. Soc. Edinburgh 60.
"	54s	27♂(1,11)	X-Y♂: No racial difference	Makino '43a, b,c, '44	Jap. J.G. 19; Bot. & Zool. 11; Cyt. 13; Z.M. (Jap.) 56.
Ovis pollii karelini	60s	30♂(11)	---	Butarin '35a, '35b	C.R. Acad. Sci. U.R.S.S. 4; Verlag. Akad. Wiss. U.S.S.R.
Ovis steato pyga	---	30♂(1)	---	"	"
Ovis pol. kar. x Ov. st. py.	60s	30♂(1)	---	Butarin '35a	C.R. Acad. Sci. U.R.S.S. 4.
Poephagus grunniens ('Yak')	62±2s	31±1♂(1)	Prob. X-Y♂	Zuitin '35	C.R. Acad. Sci. U.S.S.R. 4.
Camelidae					
Camelus bactrianus	---	35♂(1)	---	Novikov '40	Bull. Trudy Inst. Genet. 13.
C. dromedarius	---	"	---	"	"
C. bact. C. drom.	---	"	Fertile	"	"
Cervidae					
Rangifer phylarchus	72s	36(1,11)	X-Y♂	Makino '44,'49	Z.M. (Jap.) 56; Jap. J. Zootech. Sci. 19.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Suidae					
Pecari tajacu	30s	15♂(1,11)	Sex chrom. unknown	Krallinger '36	Z.Z.M.A. 24.
Sus scrofa ('Pig')	18s,♂m 20♀m	10♂(1) 8,10♂(11)	XX-O♂	Wodsedalek '13a,b	Sci. 38; B.B. 25.
"	40s,40-74m	20♂(1)	Numbers variable by fragmentation	Hance '17, '18	J.M. 30; B.B. 35.
" ('Schwein')	38s	19♂(1)	Prob. X-Y♂	Krallinger '31	Arch. Tierernähr.-zucht B 5.
" ('Pig')	"	"	X-Y♂	Bryden '33	Cyt. 5.
"	"	"	"	Hillebrand '36	Diss. Phil. Breslau, 1936.
"	40s	20♂(1,11)	X-Y♂: No racial difference	Makino '44a,b	Cyt. 13; Z.M. (Jap.) 56.
Sus vittatus leucomystax	40s	---	X-Y♂	Makino '46	La Kromosomo 1.
Perissodactyla					
Equidae					
Equus asinus	60s	30♂(1)	---	Meladze '37	Bull. Biol. Med. Exp. 3.
"	64s?	32♂?(1,11) (29-33)	X-Y♂	Sokolov '37	C.R. Acad. Sci. U.R.S.S. 15.
"	66s	33(1)	"	Makino '44, '49	Z.M. (Jap.) 56; Jap. J. Zootech. Sci. 19.
Equus caballus ('Pferd')	---	10-16♂(1)	---	Kirillow '12	A.M.A. 79.
" ('Horse')	37s	19♂(1) 9,10♂(11)	X-O♂	Wodsedalek '14	B.B. 27.
"	33-38s	19♂(1) 18,19♂(11)	"	Masui '19	J.Coll. Agr. Imp. Univ. Tokyo 3.
" ('Horse')	57-60s	30♂(1)	X-Y♂	Painter '24, '25	J.E.Z. 39; A.N. 59.
"	60s	---	"	Ranquini '34	Trab. Inst. Biol. Anim. 2.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Equus caballus ('Horse')	66s	33♂(1,11)	X-Y♂: No racial difference	Makino '43, '44	Cyt. 13; Z.M. (Jap.) 56.
'Mule' (Eq. cab. X Eq. asinus)	51s	34-49♂(1)	Meiosis irregular in F_1	Wodsedalek '16	B.B. 30.
"	38 s	---	---	Leon '38	Ann. Gembloux 44.
"	66s	---	Meiosis irregular in F.	Makino	Unpubl.

PRIMATES

Species	Chromosome Number 2n	n	Remarks	Observer	References
Simiae-Platyrrhina					
Cebidae					
Cebus sp. ('Brown Cebus')	54s	27♂(1)	X-Y♂	Painter '22, '24	Sci. 56; J.E.Z. 39.
Simiae-Catarrhina					
Anthropoidae					
Anthropopithecus ('Chimpanzee')	---	24♂(1)?	X-Y♂?	Yeager, Painter & Yerkes '40	Sci. 91.
Cercopithecidae					
Rhesus macacus	48s 48♀, ♂m	24♂(1)	"	Painter '24	J.E.Z. 39.
Hominidae					
Homo sapiens					
(a) Somatic cells					
" ('Mensch')	22-28m	---	Cornea	Flemming '82, '98	A.M.A. 20; A.A. 14.
" (")	18-40m	---	Normal tissue	Hansemann '91	Virch. Arch. Anat. 123.
" ('Man')	33-38m	---	Embryo	Wieman '13	A.J.A. 14.
" ('Mensch')	30-50(47-48)m	---	Amnion	Grosser '21, '27	A.A. 54; Frauenheilk. 5.
" (")	32-48m	---	Amnion, pleura	Rappeport '22	A.Zf. 16.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Somatic cells					
" ('Homme')	20+m	---	---	Molas '26	Trav. Lab. Biol. Univ. Madrid 24.
" ('Mensch')	24 & 48m	---	Decidual tissue	Schachow '26	A.A. 62.
" ('Human')	24±m	---	Embryo	Adamstone'29	A.R. 44.
" ('Mensch')	30-64m	---	Pleura, peritoneum	Karplus '29	Z.Z.M.A. 10.
" (")	47-50(48?) ♀,♂m	---	Tissue culture: Number variable in pathol.soma	Kemp '28,'29, '30	C.R.S.B. 99; Z.M.A.F. 16; Z.Z.M.A. 11.
" (")	30-85(45-50)m	---	"	Caffier '32	Zeits. Geburt. Gynäk. 101.
" ('Human')	52m	---	Blood cells	Chrustschoff & Berlin '35	J.G. 31.
" ('Mensch')	32-73m	---	Embryo	Andres & Shiw (Jiv) '35,'36	Z.B. (Moskaw) 4; Cyt. 7.
"	48♀m	---	Mucose uterine	Barigozzi '47	Jul. Klaus-Stift. Vererb. 22.
(b) Pathologic cells					
" ('Mensch')	6-60m	---	Cancer	Galeotti '93; Galeotti & Lustig	Beitr. Path. Anat. 14.
" ('Human')	40-50(48?) ♀m	---	Tumor, cancer	Belling '27	J. Am. Med. Assoc. 88.
" (")	±n,2n,4n	---	Karzinom	Heiberg & Kemp '29	Virch. Arch. 273.
" (")	±47-48 ±96-100 ±300	---	Epithelioma	Levine '30	Am. J. Cancer 15.
" (")	±16-40	---	Malignant tumors	Isibasi, Sino-Hara & Okada'31	Trans. Jap. Path. Soc. 21.
" (")	±n,2n,3n,4n	---	Cancer of uterus	Ohta '33	Kinki-Fujinka-Z. 16.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Pathologic cells					
" ('Homme')	50-55m	---	Evans' preparation (Liver cancer)	Winiwarter & Oguma '30	A.B. 40.
" ('Human)	23-140m	---	Cancer	Picon '30	Arch. Espanolcs Oncol. 1.
" ('Mensch')	24-136 31-583	---	Tumor, cancer	Andres '32	Z.Z.M.A. 16.
" (")	96-98s	48♂(1,11)	4n of germ cells	Andreä '33	Z.Z.M.A. 18.
"	2n(±48) 3n(±72)	---	Megaloblast	Polli '46	Arch. Sci. Med. (Trino) 82.
"	24,32, 36,44, ±2n	---	Leucemie	Polli '47	Ann. Biol. Norm. Patol. 1.
"	±24, ±48	---	Tumori maligni	Barigozzi & Dellepiane'47	Arch. Ital. Anat. Istol. Patol. 20.
"	±48	---	Anémie pernicoeuse)		
	28-34	---	Leukémie)	Barigozzi'47	Jul. Klaus-Stift. Vererb. 22.
	±24	---	Cancer de l'utérus)		
"	16,24,32, 36,48,etc.	---	Carcinome	Koller '47	Brit. J. Canc. 1.
(c) Germ cells*					
" ('Mensch' W)	8s	8♂(1),4♂(11)	---	von Bardeleben '92,'97,'98	Verh. Anat. Ges. Wien 6; Arch. Anat. Phys. Suppl.; Jena Zeits. Naturw. 24.
" ('Man' W)	---	15-19(18)♂(1)	---	Wilcox '00	A.A. 17.
" ('Mensch' W)	32?	---	---	Fick '05	Arch. Anat. Phys. Suppl. (1905).
" ('Man' W)	32s	16♂(1)	---	Moore & Arnold '05; Moore & Walker '06	P.R.S. London B 77; Liverpool Univ. Rep. 1906.

* W = (White); N = (Negro); J = (Japanese).

Species	Chromosome Number 2n	n	Remarks	Observer	References
Germ cells					
" ('Homme' W)	ca. 24s	12♂(1)	---	Duesberg '06	A.A. 28.
" ('Man' W)	22s	12♂(1) 5,7♂(11)	XX-0♂	Guyer '10,'14	B.B. 19; Sci. 39.
" ('Homme' W)	24s,m	ca. 12♂(1) ca. 18♂(11)	---	Branca '10a,b '12,'24	C.R.Ass. Anat. 12; Bibl. Anat. 21; C.R. Ass. Anat. 13; A.Z. E.G. 62.
" ('Mensch')	---	ca. 12♂(1)	---	Gutherz '12,'22	A.M.A. 79; Z.I. A.V. 27.
" ('Man' W,N)	---	12♂(1) 10,11 or 12♂(11)	XX-0?	Montgomery '11,'12	B.B. 21; J.Acad. Nat. Sci. Phila. 15.
" ('Man' W)	24s	12♂(1,11)	X-Y♂	Wieman '17	A.J.A. 21.
" (")	---	12♂(1)	2X?	Jordan '14	Carnegie Inst. Publ. 182.
" ('Mensch' W)	24s	"	---	Friedenthal '21	Arch. Rass. Ges. Biol. 13.
" ('Homme' W)	47s 48o	24♂(1) 23,24♂(11)	X-0♂,X-X♀	Winiwarter '12,'21a,b,'23	A.B. 27; C.R.S.B. 85; Rev. Anthrop. (1921); C.R. Ass. Anat. Dixsept. reunion.
" ('Man' J)	47s	24♂(1)	X-0♂	Oguma & Kihara '22,'23	Z.M. (Jap.) 34; A.B. 33.
" ('Man' W,N)	48s	24♂(1,11)	X-Y♂	Painter '23a,b, '24	J.E.Z. 37; Sci. 58; A.N. 58.
" ('Homme' W)	47s	24♂(1) 23,24♂(11)	X-0♂	Winiwarter & Oguma '25,'26	C.R. Ass. Anat. Turin (1925); A.B. 36.
" ('Human' W,N)	48s 48♀,♂m	24♂(1,11)	X-Y♂	Evans & Swezy '28,'29	Genet. 13; Mem. Univ. California 9.
" ('Man' J)	48s	"	"	Minouchi & Ohta'32,'34	Z.M. (Jap.) 44; Cyt. 5.
" ('Mensch' W)	"	"	"	Shiwago & Andres'32a,b	Z.B. (Moskaw) 1; Z.Z.M.A. 16.

Species	Chromosome Number 2n	n	Remarks	Observer	References
Germ cells					
" ('Man' W)	---	---	X-Y♂	Gatenby & Beams '35	Q.J.M.S. 78.
" (")	---	24♂(1)	X-Y♂	King & Beams '36	A.R. 65.
" ('Man' J)	---	"	"	Iriki '36	Z.M. (Jap.) 48.
" ('Mensch' W)	47-48m	---	10 pairs of autosomes identified	Andres & Navaschin '36	Z.Z.M.A. 24.
" ('Human' J,M)	47s	24♂(1)	X-0♂	Oguma '30,'36, '37,'39	A.B. 40; Nippon Gakuzyutsu-Kyokai 11; J.M. 61; Bot. & Zool. 7.
" ('Human' W)	48o	---	X-X♀	Swezy & Evans '30	J.M. 49.
" (")	---	16-18(24) ♀(1)	---	Hoadley & Simons '28	A.J.A. 41.
" (")	---	23♀(1)?	---	Allen Pratt & Newell '30	A.J.A. 46.
" ('Mensch' M)	48o	---	X-X♀, Abnor. mitoses in oog.	Andres & Vogel '36	Z.Z.M.A. 24.
" (")	48o (43-53)	---	Culture of embr. ovary	Shiw '38	Biol. Zhurn. (Moskaw) 7.
" ('Human' W)	---	23♀(11)	Egg in vitro	Pincus & Saunders '39	A.R. 75.

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